

1 IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
2 IN AND FOR THE CITY AND COUNTY OF SAN FRANCISCO

3 ----oOo----

4 MILTON J. HOROWITZ and)
5 SHIRLEY HOROWITZ,)
6 Plaintiffs,)
7 v.) No. 965245
8 RAYBESTOS-MANHATTAN, INC.,)
9 et al.,)
10 Defendants.)
11 - - - - -)
12
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14
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16 DEPOSITION OF MELVIN W. FIRST, SC.D.
17 AUGUST 4, 1995
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23 Reported By:
24 MARY F. NELSON, CSR 3553
25

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1 I N D E X

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6	EXAMINATION BY MR. TIGERMAN	8
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8	PLAINTIFFS' EXHIBITS:	
9	IDEN.	
9	1 Copy of a 17-page curriculum vitae.	8
10	2 Copy of a two-page document entitled	
11	"Dr. Killian by Phone," dated 11/9/51.	58
12	3 Copy of a one-page document entitled	
13	"By Phone from Dr. Killian" dated 11/20/51.	59
14	4 Copy of a three-page letter to Harris B.	
15	Parmeles from David N. Kendall dated 1/28/54.	62
16	5 Copy of a seven-page letter to Harris B.	
17	Parmeles from David N. Kendall dated 2/27/54	
18	and copies of three graphs.	62
19	6 Copy of a chart entitled "Asbestos Threshold	
20	Limit Values."	65
21	7 (A, B, C) Copy of 10 pages containing three	
22	publications from the Journal of the AMA.	
23	8 Copy of a seven-page news release from the	
24	Bureau of Industrial Service, Inc.	72
25	///	

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1	PLAINTIFFS' EXHIBITS (CONT'D)	
2	9 Copy of a 29-page condensed transcript of the	
3	Deposition of Jevane Newman dated 9/22/94 and	
4	a page of handwritten notes.	85
5	10 Copy of a 78-page document from Materials	
6	Analytical Services dated 10/21/94.	85
7	11 Copy of a 12-page article entitled	
8	"Environmental Release of Asbestos from	
9	Commercial Product Shaping."	86
10	12 Copy of a 40-page condensed transcript of	

11		Douglas P. Fowler, Ph.D., dated 10/12/94.	86
12	13	Copy of a 42-page document from Materials	
13		Analytical Services dated 12/29/93.	86
14	14	Copy of a 38-page document from the Federal	
15		Register, Vol. 52, No. 210, Pages 41857-94.	
16		and a copy of three handwritten notes.	86
17	15	Copy of a two-page letter to William S.	
18		Ohlemeyer from Melvin W. First dated 5/30/95.	87
19	16	Copy of a 30-page condensed transcript of	
20		William E. Longo dated 9/22/94 and handwritten	
21		notes.	87
22	17	Copy of 71 pages containing a condensed	
23		transcript of William E. Longo dated 4/13/95	
24		and a document from Materials Analytical	
25		Services, Inc.	88

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1	PLAINTIFFS' EXHIBITS (CONT'D)		
2	18	Copy of one page entitled, "By Phone	
3		from Dr. Killian" dated 11/20/51.	88
4	19	Copy of two pages entitled, "Dr. Killian	
5		by Phone" dated 11/9/51.	89
6	20	Copy of a ten-page document from Materials	
7		Analytical Services dated 1/2/94.	90
8	21	Copy of a 37-page document from Materials	
9		Analytical Service with a cover letter to	
10		Dan Childs from Mark Rigler dated 6/10/91.	90
11	22	Copy of 22-pages including a letter to David	
12		Kendall dated 12/17/53; a letter to Harris	
13		B. Parmele dated 1/28/54; a letter to W.J.	
14		Halley dated 2/12/54; letter to Ernest F. Fullam	
15		dated 2/12/54; a letter to Harris B. Parmele	
16		dated 2/27/54 and attachments.	92
17	23	Copy of a 71-page transcript of witness	
18		Douglas Hallgren in Frost v. Abex,	
19		Pages 1320-89, dated 1/6/94.	93
20	24	Copy of a nine-page document referring to	
21		U.S. Patent No. 2,793,572.	95
22	25	Copy of the first page of an article entitled	
23		"Designing and Constructing the Next	
24		Generation of HEPA Filters" dated December 1993.	95
25	///		

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1	MARKED QUESTIONS:	
2	Page/Line	
3	51/8	
4	55/19	
5	56/5	
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Page 5

1 BE IT REMEMBERED that, on Friday, the 4th day
2 of August, commencing at the hour of 2:42 o'clock p.m.
3 thereof, at the LAW OFFICES OF WARTNICK, CHABER, HAROWITZ,
4 SMITH & TIGERMAN, 101 California Street, 26th Floor, San
5 Francisco, California 94111-5853, represented by STEPHEN
6 M. TIGERMAN ESQ., before me, MARY F. NELSON, Certified
7 Shorthand Reporter No. 3553, State of California, duly
8 authorized to administer oaths pursuant to Section 2093(b)
9 of the California Code of Civil Procedure, personally
10 appeared

11 MELVIN W. FIRST, SC.D.
12 called as a witness by the plaintiff; and the said witness,
13 being by me first duly sworn, was thereupon examined and
14 testified as hereinafter set forth.

15 LAW OFFICES OF WARTNICK, CHABER, HAROWITZ,
16 SMITH & TIGERMAN, 101 California Street, 26th Floor, San
17 Francisco, California 94111-5853, represented by STEPHEN
18 M. TIGERMAN, ESQ., appeared as counsel on behalf of the
19 plaintiff.

20 LAW OFFICES OF SHOOK, HARDY & BACON, 1200
Main
21 Street, Kansas City, Missouri 64105, represented by MARK
22 EVANS, ESQ., appeared as counsel on behalf of the defendant
23 Lorillard, Inc.

24 LAW OFFICES OF PREUSS, WALKER & SHANAGHER,
595
25 Market Street, Suite 1600, San Francisco, California 94105,
Page 6

1 represented by CYNTHIA ROENISCH, ESQ., appeared as counsel
2 on behalf of the defendant Hollingsworth & Vose.

3 LAW OFFICES OF NUTTER, MCCLENNEN & FISH, One
4 International Place, Boston, Massachusetts, 02110,
5 represented by STEPHEN J. BRAKE, ESQ., appeared as counsel
6 on behalf of the defendant Hollingsworth & Vose.

7 ALSO PRESENT: MADELYN CHABER, ESQ., of
8 WARTNICK, CHABER, HAROWITZ, SMITH & TIGERMAN.

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Page 7

1 MELVIN W. FIRST, SC.D.
2 having been duly sworn,
3 testified as follows:

4
5 EXAMINATION BY MR. TIGERMAN

6 MR. TIGERMAN: My name is Steve Tigerman.
I'm
7 one of the attorneys for plaintiffs Horowitz and we are
here
8 in my office today to do your deposition.
9 I'd like the court reporter to indicate that
10 the time is approximately 2:42. I understand there was
some
11 difficulty in making it over and there may have been some
12 confusion about the time. It was my understanding that the
13 deposition was scheduled to commence at 2:00 o'clock and I
14 instructed our secretary to communicate with the office
15 setting up the deposition about the fact that I and other
16 attorneys from our office have plans commencing at
17 approximately 5:00 o'clock this evening, and it would be
18 preferable to start earlier than later.
19 If it should turn out we are unable to finish
20 the deposition by 5:00 o'clock I will insist on having a
21 right to continue the deposition and would be glad to do so
22 by telephone if necessary, if there are any areas that we
23 are unable to cover at this time.

24 MR. BRAKE: Don't confuse silence with
assent.

25 Madelyn Chaber has been late for everything. The witness
Page 8

1 was testifying in another case this morning, and we got
here
2 as quickly as we could. I think he can tell you his
3 opinions and the bases form them, and I appreciate your
4 flexibility on the phone. But don't confuse silence with
5 assent.

6 MR. EVANS: Maybe the best thing is to move
7 along and we'll take it up at the proper time.

8 MR. TIGERMAN: Fine.

9 Q. Doctor, first of all, this morning you were
10 testifying in another courtroom; is that correct?

11 A. Yes.

12 Q. And do you know the name of that case?

13 A. I forgot.

14 Q. It was in the San Francisco Superior Court?

15 A. Yes.

16 Q. And you were called as witness by whom, by
17 which party?

18 A. The defendant.

19 Q. And the defendant in that case was?

20 A. Lorillard.

21 Q. And that is a case in which it is also
alleged

22 that a person contracted mesothelioma as a result of their
23 exposure to Kent Micronite filters; is that correct?

24 A. That's my understanding.

25 MR. BRAKE: Object to the question since the
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1 trial judge already entered an order precluding other
2 claims.

3 MR. TIGERMAN: My understanding is that the
4 judge had actually said it should be avoided if at all
5 possible. But it goes to the issue of expert bias and
6 impeachment.

7 MR. BRAKE: My point is you're starting off
on
8 something prejudicial, not a good way to start the day.

9 MR. TIGERMAN: Q. How many other cases have

10 you testified in court as a witness for Lorillard?
11 A. Two.
12 Q. And were those both within the last couple of
13 years?
14 A. Within the last few years, let's put it that
15 way.
16 Q. When you say two years --
17 A. I said a few.
18 Q. A few, I'm sorry. Is a few three, four,
five?
19 A. It could be four.
20 Q. And does that include deposition testimony as
21 well?
22 A. In some cases.
23 Q. Would the number be greater than a few or
four
24 if we were to include deposition testimony?
25 A. The deposition testimony was in the same

Page 10

1 cases, not in cases other than the ones I mentioned.
2 MR. TIGERMAN: Now I'd like to hand to you
3 what I showed you a little earlier which appears to be your
4 CV. We will mark that as Plaintiffs' Exhibit 1.
5 (WHEREUPON, PLAINTIFFS' EXHIBIT 1
6 WAS MARKED FOR IDENTIFICATION).
7 MR. TIGERMAN: Q. Is it true that that CV is
8 your curriculum vitae as it stands currently with the
9 exception of a few publications?
10 A. Correct.
11 Q. And those few publications you indicated off
12 the record have nothing to do with your expertise or the
13 subject matter of this case; is that correct?
14 A. That's correct.
15 Q. Do any of those articles have to do with
16 filtration or filters?
17 A. No.
18 Q. Now I would like to go a little bit through
19 your experience if I might and ask you whether or not
during
20 the time that you were being educated at either Harvard or
21 MIT whether you studied any fields that specifically
touched
22 upon asbestos?
23 A. Yes.
24 Q. Can you describe what education you received
25 as either an undergraduate or a postgraduate student in the

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1 area of asbestos?
2 A. My professional training includes industrial
3 hygiene and I had one course in my undergraduate program at
4 MIT that was labeled "Industrial Hygiene," and in that
5 course we did take up the subject of asbestos in working
6 places. My degree at Harvard is in the field of industrial
7 hygiene engineering and this also would include the subject
8 of asbestos exposures and their effects and prevention.
9 Q. So in the course of your master's degree
10 education you took a single class that touched on asbestos
11 as one of the topics?
12 A. That's not what I said.
13 Q. Okay.
14 A. I'm afraid I'm not being clear with my
eating,
15 but I said in my undergraduate.

16 Q. I see.
17 A. My graduate education was specifically in the
18 field of industrial hygiene.
19 Q. And how much of that specifically touched on
20 the area of asbestos?
21 A. Dusty lung diseases are an important subject
22 in occupational health and occupational health maintenance.
23 And therefore this would be a subject of particular
24 importance. I don't think I can tell you what fraction it
25 represented.

Page 12

1 Q. Can you tell me the names of any of the texts
2 that you used in either the course of your master's
3 education or your doctorate education that touched on areas
4 of asbestos?
5 A. One that comes to mind immediately is
6 "Industrial Dust," by Drinker and Hatch.
7 Q. That would be Dr. Phillip Drinker?
8 A. Yes.
9 Q. Any others that come to mind?
10 A. Not immediately.
11 Q. And in 1936 that's when you got your
12 bachelor's degree?
13 A. Yes.
14 Q. And when you got your bachelor's degree you
15 had taken a single class that had touched on asbestos?
16 A. Single course.
17 Q. I see. I didn't mean sound like it was one
--
18 A. A one-semester course.
19 Q. Okay. Have you ever done any research in the
20 area of asbestos?
21 A. I have done research with asbestos in the
area
22 of asbestos.
23 Q. And can you please tell me about that?
24 A. It was not in the area of health effects but
25 was in the area of filtration primarily.

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1 Q. And how many such studies have you conducted?
2 A. It was over a period of perhaps 20 years.
3 Q. All right. First of all, have you ever
4 published any, either any chapters in books or any peer
5 review articles that relate to asbestos?
6 A. Mm-hmm, yes. And they are listed in the CV.
7 Q. Could you pick those out for me?
8 A. Do you want me to give the whole title or
just
9 give you the number on the CV?
10 Q. Go ahead and just give me the number.
11 A. No. 8, No. 11. No. 35.
12 Q. Number what?
13 A. 35. 48 -- pardon me, 49. 62. We're talking
14 about filtration with asbestos involved? Is that what you
15 want or just filtration altogether?
16 Q. Actually I thought we were talking about
17 asbestos, any article that touched upon asbestos in any
way.
18 A. Well, okay. 119. Under Contract Reports,
No.
19 7. There's one missing that should be included. Let me --
20 did you get that one or can I just stick it on here? No,
21 it's missing here. It's a chapter in a book and it's

22 concerning nuclear cleaning technology. And in there is a
23 chapter on filtration in the nuclear industry. I'll have
to
24 get that to you.

25 Q. What is the name of the book?

Page 14

1 A. It's one of a series and it's concerned with
2 nuclear air and gas cleaning, and I'm not sure that's the
3 precise title but that's the substance of it.

4 Q. Who is the author or the editor of the book I
5 guess if I wanted to find it in the library?

6 A. I think the best thing would be to send you
7 that information.

8 Q. All right, you'll do that.

9 As far as these publications which you've
gone

10 through in No. 8, "How Dust Collectors Perform," how does
11 that touch on asbestos?

12 A. It concerns a research project for the Atomic
13 Energy Commission in which I used asbestos as a precoat for
14 a filter in order to make it more efficient.

15 Q. Did you measure fiber release?

16 A. From the filter?

17 Q. Yes.

18 A. In a general way in the sense we measure the
19 efficiency of the filter and what came through would be any
20 fibers that might have gone through, but we did not isolate
21 the fibers specifically.

22 Q. So that was a study then?

23 A. Yes, it was a research project.

24 Q. And that research project did not attempt to
25 quantify the amount of asbestos fiber released from the

Page 15

1 filter if any; is that correct?

2 A. That's correct.

3 Q. It did attempt to quantify the amount of
4 particulate matter that came through the filter, is that
5 what you're saying?

6 A. Yes, that was the idea to make it more
7 efficient than it would have been without the addition of
8 the asbestos fiber coating on the surface.

9 Q. And was air sampling done?

10 A. Yes.

11 Q. And what kind of device was used given the
12 fact that this publication was done in 1952, was it a
midget

13 impinger?

14 A. No, it would be a filter.

15 Q. In 1952 what were the devices available for
16 doing air sampling?

17 A. Essentially what's available at the present
18 time. There was the paper that was used for the absolute
19 type filters, there was the membrane filter that's used
20 today for air sampling, and there was a felt filter that
was
21 sometimes used.

22 Q. All right. Those are the filters but are you
23 familiar with the term "midget impinger"?

24 A. Of course.

25 Q. What about a konimeter, are you familiar with

Page 16

1 that?

2 A. Yes, they are obsolete equipment.

3 Q. And those are the devices used to actually
4 draw the air in and through the filters; is that correct?
5 A. Well, the midjet impinger would have to have
a
6 external pump. The konimeter had a built-in piston that
7 brought the air into the sensing chamber where the
particles
8 could be counted.

9 Q. What kind of device was used to bring the air
10 into the filter in connection with the article or research
11 project you did pertaining to how dust collectors perform?

12 A. A compressed air ejector that would pick up
13 the asbestos from a pile, aerosolize it and blow it into
the
14 entry into the cloth fabric filter.

15 Q. All right. With respect to the research
16 project that was done in connection with that article, "How
17 Dust Collectors Perform," if I understand you correctly no
18 attempt was made to sort asbestos particulate matter from
19 other particulate matter that came through the filter; is
20 that correct?

21 A. That's correct.

22 Q. Do you have any idea whether asbestos
23 particulate matter was released in any amount from that
24 filter?

25 A. I cannot give you a measurement but my

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1 understanding of the process is that there would be none.

2 Q. How was that particular filter constructed,
3 the filter which was tested?

4 A. You mean the testing filter or the filter
that
5 had the asbestos?

6 Q. The filter that had the asbestos in it, how
7 was it actually constructed?

8 A. It was basically a commercial industrial
cloth

9 collector. And the essential feature of it is that it
10 builds up a filter cake that does the high efficiency
11 filtration job and it can be cleaned by shaking the dust
12 cake off, and then this reduces the air flow resistance
13 through the filter.

14 Q. What was the method of manufacture of that
15 filter?

16 A. Well, the cloth would be woven as a heavy,
17 dense cloth, and then it would be hung from metal supports
18 that would have a mechanism that would shake the bag when
it
19 was time to clean it.

20 Q. So this was essentially a woven asbestos
21 cloth?

22 A. No, it was a, it was a woolen cloth.

23 Q. Which contained some asbestos fiber?

24 A. No, the asbestos was applied to the exterior
25 of it by blowing it in through this compressed air ejector

I

Page 18

1 mentioned. The idea was to coat the surface of the filter
2 evenly with finely divided asbestos fibers and these
provide

3 the high efficiency filtration layer. The cloth acts as a
4 support for the asbestos fibers.

5 Q. How were the asbestos fibers applied, wet or

6 dry?
7 A. Dry.
8 Q. And were they applied to both sides of the
9 cloth?
10 A. Absolutely not.
11 Q. Only to one side of the cloth?
12 A. Of course, the side that the air is coming
13 into. If you applied it to the other side you'd blow it
14 off.
15 Q. Does that mean that it was necessary to keep
16 some velocity of air going through the cloth, otherwise the
17 asbestos was going to fall off the inside as well?
18 A. No, it was not, because fine fibers adhere
19 very tenaciously to surfaces and so once they contacted the
20 cloth they stayed there until you removed them with a great
21 deal of force.
22 Q. And your understanding was that no asbestos
23 fiber actually, no measurable amount of asbestos fiber was
24 released?
25 A. I like the latter, yes, no measurable part.

I
Page 19

1 can't guarantee no fiber was ever released.
2 Q. What about other particulate matter was there
3 measurable particulate matter in as a result of the air
4 sampling in the study?
5 A. The whole purpose of the adding the asbestos
6 was to increase the efficiency of the filter to 99.9
percent
7 by weight.
8 Q. When you said no effort was made to discern
9 between asbestos particulate matter and other particulate
10 matter in the course of the air sampling does that mean
that
11 some of the measurable particulate matter could have been
12 asbestos?
13 A. Conceivably so but unlikely.
14 Q. And for what reasons?
15 A. Because the asbestos would not wander through
16 the cloth backer but would adhere to the surface.
17 Q. And what is your basis for saying that the
18 asbestos would not wander through the backer?
19 A. Well, because my knowledge of filtration
20 theory and my knowledge of the adhesion of fibers and small
21 particles to surfaces.
22 Q. Would it in part depending on the velocity of
23 air passing through filter?
24 A. The velocity of air through this type of
25 filter is on the order of 30 feet per minute which is

Page 20

1 equivalent to about a quarter of a mile per hour. And at
2 that velocity small particles will not be re-entrained from
3 surfaces. You have to get to velocities of 2000, 3000 feet
4 per minute. So it would be way below anything that would
be
5 a cause for resuspension.
6 Q. 2 to 3, you said approximately 2 to 3,000
feet
7 per minute?
8 A. Yes. There is really a high velocity air
jet.
9 Q. Can you tell me the greatest velocity at
which

10 a smoker can pass air through a smoke filter?
11 A. Yes, I calculated that. The standard smoking
12 cycle of 35 ml in two seconds represents 70 feet per
minute.
13 Q. When you say standard, that means a smoking
14 machine, right?
15 A. Yes.
16 Q. But my question is did people ever pass air
17 through a filter faster than a smoking machine?
18 A. Well, that's an average smoking experience.
19 That's why the number was selected.
20 Q. So some people pass it higher, some lower?
21 A. Yes, but in terms of the 70 feet per minute
22 for the standard smoking cycle and the fact that you need
23 velocities of at least 2,000 feet per minute, even if we
24 double it or triple it we're still well below any velocity
25 that would be likely to re-entrain fibers or small

Page 21

1 particles.
2 Q. The velocity that would be likely to
3 re-entrain small particles, would that depend on the
4 composition of the material through which the air was
5 passing?
6 A. No, it would not. These are intermolecular
7 forces that are independent of the material.
8 Q. So if I had a loosely woven asbestos cloth
and
9 I had a tightly woven asbestos cloth, it wouldn't matter
10 how, whether or not they received -- strike that.
11 If we took a loosely woven asbestos cloth and
12 a tightly woven asbestos cloth and passed air through the
13 two of them, they would both have re-entrainment at equal
14 velocities?
15 A. If they were of the same particle size
16 distribution.
17 Q. Meaning if the fibers were of the same
18 diameter?
19 A. Yes, and they were small, then the answer
20 probably would be yes.
21 Q. So if the fibers were of the same diameter
and
22 we had a loosely wound cloth and a tightly wound cloth --
23 A. Never mind the wound part. Let's talk about
24 porosity. You were talking I assume about a high porosity
25 structure?

Page 22

1 Q. Yes.
2 A. And a less high porosity structure.
3 Q. Porosity is not important given equal sizes
of
4 diameter for the asbestos fibers?
5 A. You can stretch it to the limit where the
6 whole thing falls on the floor, of course. But if we're
7 talking about normal porosities that you would expect to
see
8 in a composed fabric, the more porous one would not have
9 shed any more than the less porous one.
10 Q. Doesn't it matter how it is that the fibers
11 are bound?
12 A. Well, they are not bound by glue or any other
13 material of that kind. They are bound by their adhesion to
14 each other.
15 Q. Right, but if I had a handful of chrysotile

16 would those fibers be bound to each other?

17 A. Now you're changing the situation. We were
18 talking about a porous structure that you said woven. Now
19 you've got a handful of fibers. That's not the same thing.

20 Q. Right. A handful of fibers would release or
21 would cause a re-entrainment of measurable asbestos dust?

22 A. A handful of fibers, I could simply turn my
23 hand and they would sift down to the floor. This is not a
24 filter.

25 Q. Okay. So one of the requisites or one of the

Page 23

1 prerequisites to what you were stating was that these
fibers

2 have to be in some sort of filter, they have to be bound or
3 woven together; is that correct?

4 A. Generally they would, we would term it they
5 would disperse evenly in a porous structure, a web perhaps,
6 or you were talking earlier about a cloth. Now that would
7 be woven which would be a different structure.

8 Q. Are you aware of any studies which discuss
9 measurable emission of asbestos dust from asbestos cloth
10 without the cutting of that cloth, without the manipulation
11 of that cloth?

12 A. If you have asbestos cloth and you shake it
13 vigorously I would be unsurprised if you got some particles
14 off it. What size they would be, I don't know.

15 Q. Are you aware of any studies which measured
16 the amount of respirable asbestos dust emitted from the
17 inside of a fire hood made of asbestos cloth?

18 A. I haven't seen any of the figures.

19 Q. Are you familiar with any studies which
20 discuss the amount of asbestos dust emitted from helmets
21 which are, which have asbestos cloth covers?

22 A. What product?

23 Q. Firefighting helmets?

24 A. No.

25 Q. Are you aware of any studies relating to

Page 24

1 firefighting helmets and the amount of respirable asbestos
2 dust?

3 A. I am not.

4 Q. I'd like to show you a letter to the editor
5 from the American Occupational Hygiene Journal in 1971
6 entitled, "Asbestos Dust Levels Inside Firefighting Helmets
7 with Chrysotile Asbestos Covers" by a K.P.S. Lumley,
8 L-U-M-L-E-Y, and ask you if you've ever seen this article
9 before?

10 A. No, I can't recall ever seeing this.

11 Q. Would you agree with the proposition that if
12 there is a respirable amount of asbestos dust caused by
13 merely wearing a firefighting helmet with an asbestos cover

--
14 strike that.

15 Would you disagree with the notion that
16 wearing an asbestos firefighting helmet would cause
17 respirable asbestos dust for the person wearing the helmet?

18 A. Having not read the article I really couldn't
19 give you an opinion on it.

20 Q. Okay. Would you be surprised if someone were
21 to tell you that there is a measurable amount of asbestos
22 dust above threshold limit value to firefighters who wear
23 helmets with asbestos covers?

24 A. I think you would have to be a little more

25 specific of the conditions because if the helmet had been
Page 25

1 through a fire it would become friable. Or if it had been
2 used for a long time it would tend to fray. And if
somebody

3 threw it in the bottom of the fire engine and walked over
it

4 for a couple of months, I think it would be true. Now I
5 don't think this is relevant to filters, however. The
6 asbestos fabric that's used for firefighting is not a
7 filter.

8 Q. And why is that fabric subject to different
9 principles when it comes to molecular adhesion?

10 A. For one thing the fibers that are used tend
to
11 be larger. Secondly, the way that these are made is to mix
12 in cotton with the asbestos fiber and then a thread is spun
13 and then the cloth is woven in the same way as a cotton
14 fabric or wool fabric. These are not intended to be air
15 filters. They are intended for the purpose for which they,
16 which you had mentioned.

17 Now there is a, I know there has been at
least

18 one paper published on fiber release from asbestos gloves
in
19 laboratories. And here again if you've seen a pair of
20 asbestos gloves that's been around the laboratory for a
21 couple of years it can be falling apart. And certainly it
22 will shed fibers.

23 Q. Would you be surprised if someone were to
tell

24 you there is measurable asbestos dust exposure to a
25 firefighter wearing a new helmet with an unlined asbestos

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1 cover?

2 A. I wouldn't be surprised but I don't know the
3 details.

4 Q. Why is it large fibers have different
5 molecular adhesion properties than small fibers?

6 A. Because the forces that tend to remove them
7 act on large particles less strongly than they do on small
8 particles.

9 Q. Isn't it true that -- well, you said that
10 asbestos cloth was mixed in with cotton as part of the
11 weaving process; is that correct?

12 A. Usually.

13 Q. Isn't it true that Kent Micronite filters did
14 not only have filters but also did have some cotton?

15 A. It's my understanding that some of them might
16 have. Certainly it's mentioned in the patents.

17 Q. You've read the patents?

18 A. Yes.

19 Q. Now article No. 11 on your CV, I'll let you
20 look at that one a moment, can you tell me how it is that
21 that one involved asbestos?

22 A. Yes, that's the sampling method that's used
23 for asbestos sampling.

24 Q. And the name of that article is?

25 A. "Air Sampling with Membrane Filters."

Page 27

1 Q. Was asbestos the only substance discussed in
2 that article?

3 A. No, and asbestos wasn't discussed

4 specifically.
5 Q. Why is it then you say that that article
6 touched on asbestos?
7 A. Because that's the method that is used for
8 sampling asbestos at the present time.
9 Q. It's also the method used to sample what
else?
10 A. Anything else you like.
11 Q. So that article was not specific to
12 asbestos; is that correct?
13 A. That is correct. It has a role because it's
14 the method used for sampling for asbestos.
15 Q. Does the article -- and the article does not
16 even say the word "asbestos"?
17 A. I don't believe it does.
18 Q. Did the article No. 8 on your CV, did that
19 actually touch on the health effects of asbestos, "How Dust
20 Collectors Perform"?
21 A. No.
22 Q. Did it, was one of the designs or one of the
23 goals of that research study to ascertain whether or not
24 there was asbestos fiber release in No. 8?
25 A. Didn't we just go over that?

Page 28

1 Q. Right, but I did not ask you this question.
2 Was one of the goals of that study to determine whether
3 there was asbestos fiber release?
4 A. I think I've already answered that. That was
5 not the objective.
6 Q. Okay. On No. 11 was one of the goals to
7 discuss the issue of asbestos fiber release?
8 A. No.
9 Q. And did that article discuss the health
10 aspects of asbestos?
11 A. No.
12 Q. Article No. 35, first of all what was that
13 article about?
14 A. It reviewed the information on the filters
15 that had been precoated with asbestos.
16 Q. So were these the same types of fibers --
17 strike that. Were these the same types of filters that had
18 been discussed in article No. 8?
19 A. Yes.
20 Q. And despite the fact this article was written
21 approximately 11 years hence the same types of filters were
22 still being used?
23 A. Well, it's a general review. So yes, as far
24 as I know that was being used.
25 Q. To the best of your recollection was the word

Page 29

1 "asbestos" used in that article?
2 A. To the best of my recollection it reviewed
the
3 performance of the asbestos-coated filter.
4 Q. And was any of the -- strike that. Was there
5 an objective with respect to that article of ascertaining
6 the amount of asbestos fiber release from that filter?
7 A. No.
8 Q. And did that article discuss the health
9 effects of asbestos?
10 A. No, it did not.
11 Q. Article No. 49?
12 A. Let me remind you that what you asked me was

13 any article that touched on asbestos without any other
14 qualification.

15 Q. That's right.

16 A. Okay.

17 Q. No. 49, how did that article touch upon
18 asbestos?

19 A. It reviewed information on high efficiency
20 filters that contained asbestos as one of the components.

21 Q. Is the word "asbestos" in that article?

22 A. I believe it would be.

23 Q. All right. Now that article was a was
24 proceeding of the Tenth USAEC Air Cleaning Conference. Is
25 that a peer review publication?

Page 30

1 A. No, it is not.

2 Q. And what is a peer review publication?

3 A. One in which the papers are sent out to
4 referees.

5 Q. And why are papers sent out to referees for
6 peer review?

7 A. For comments as to suitability for
publication

8 and to have comments that might improve the paper.

9 Q. Have you ever been a peer that did peer
10 review?

11 A. Oh, yes.

12 Q. Have you ever rejected a paper after peer
13 review?

14 A. Yes.

15 Q. Have you ever rejected a paper after peer
16 review because the techniques or methods that were used
were
17 not scientifically sound?

18 A. Yes.

19 Q. And that is one of the purpose of having
20 peers, is to determine the suitability of the scientific
21 technique that's employed; is that correct?

22 A. Yes.

23 Q. And with respect to article No. 49, can you
24 tell me in what sense that article touched on asbestos?

25 A. Again the high efficiency filters.

Page 31

1 Q. Same types of filters as were discussed
2 earlier?

3 A. Yes.

4 Q. The ones with the fabric and the asbestos
5 blown on to the cloth?

6 A. No, these were the types of filters that had
7 asbestos and either glass or a vegetable fiber mixture.

8 Q. All right. That article was 1968; is that
9 correct?

10 A. That's what it says.

11 Q. And at that point was there a disease known
12 such as mesothelioma?

13 A. I would venture to say it was.

14 Q. By the way, up to this point did any of these
15 filters utilize chrysotile fiber, any of the articles we
16 have discussed so far?

17 A. Well, chrysotile was what I used --
chrysotile

18 is what I used for testing of the cloth fiber, not
19 crocidolite. But crocidolite was a component of the high
20 efficiency atomic energy filters.

21 Q. Now the article which is listed as No. 49,
did
22 that touch on the health aspects of asbestos in any way?
23 A. No, it does not.
24 Q. Was any aspect of that article to either
25 quantitatively or qualitatively assess the fiber release of
Page 32
1 asbestos particles from the filters?
2 A. No.
3 Q. Article No. 62 I believe is the next one you
4 gave me. What was that article generally about?
5 A. It's about the use of fibers that have an
6 asbestos content. And it was a test of these fibers at
high
7 temperature.
8 Q. That was a proceeding of the Twelfth AEC Air
9 Cleaning Conference. Was that a peer-reviewed publication?
10 A. Well, I guess I have to say I was the peer
11 reviewer of my own paper.
12 Q. Have you ever rejected yourself?
13 A. I haven't rejected any of my own papers yet.
14 But I was the editor of the proceedings.
15 Q. If I wanted to get the article that was
listed
16 as No. 49 from the proceedings of the Tenth AEC Air
Cleaning
17 Conference how would I go about getting that? Is that in,
18 for example, the Harvard Library?
19 A. Well, no, I don't think so. It's available
20 from NTIS, National Technical Information Service. And all
21 of these conference proceedings are either from that source
22 or from the superintendent of documents.
23 Q. Now the article which is No. 62 that we were
24 touching on, again did that deal with crocidolite asbestos,
25 chrysotile asbestos?
Page 33
1 A. The filters always had chrysotile. Pardon
me.
2 They also had crocidolite. They always had crocidolite.
3 Q. What kinds of filters were these?
4 A. They are called absolute filters.
5 Q. Gas mask filters, were those at any time made
6 out of crocidolite or have crocidolite contact?
7 A. Yes.
8 Q. Have there been filters that utilized
9 chrysotile instead of crocidolite?
10 A. It's my understanding there with some filters
11 used chrysotile as a substitute for crocidolite during and
12 following World War II.
13 Q. Due to a shortage of crocidolite?
14 A. No, the crocidolite comes from overseas and
15 the military of course was nervous about that.
16 Q. Do you have an opinion on whether or not
there
17 is a background level of exposure to crocidolite for people
18 who, for example, live in San Francisco?
19 A. There has been a publication in Science about
20 four or five years ago in which the background level of
21 asbestos in the environment was reviewed and in this
22 publication there are hundreds of measurements that have
23 been made in various localities. So the conclusion is that
24 if you look at the sample carefully enough you can find
some

25 background. And the numbers that appear there range from
Page 34

1 about .01 to .00 on fibers per cc.

2 Q. When you say an article in Science, was that
3 the Mossman and Gee article?

4 A. Yes.

5 Q. Are there any other naturally occurring veins
6 of crocidolite in the United States?

7 A. I'm quite sure there are because as you may
8 know -- no, I'm going to take that back. I don't know of
9 any. I don't know of any. What I was about to say was
that

10 you would find some crocidolite intermixed with chrysotile.

11 Q. But that would be tremolite actually,
wouldn't
12 it?

13 A. Well, you can, that's just another name for
14 the same thing.

15 Q. Is tremolite crocidolite?

16 A. No, crocidolite is specific. But it's just
an
17 amphibole type of fiber.

18 Q. Do you have an opinion as to whether or not
19 all amphiboles have equal carcinogenic potential when it
20 comes to the potential of mesothelioma?

21 MR. EVANS: Object, beyond the scope of his
22 designation. You can answer.

23 THE WITNESS: Okay. Well, the fact that the
24 threshold limit values for all of the different types of
25 asbestos now have come down to equal numbers would suggest

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1 that the answer to your question is yes.

2 MR. TIGERMAN: Q. So in your opinion
3 chrysotile is equally as capable of causing mesothelioma as
4 crocidolite?

5 MR. EVANS: Same objection.

6 MR. BRAKE: Tobacco I don't think you've
7 established whether he has formulated an opinion.

8 MR. TIGERMAN: I asked do you have an
opinion.

9 MR. BRAKE: You put it in a leading fashion.

10 MR. TIGERMAN: I asked if he had an opinion.

11 MR. BRAKE: If that's the question, fine, do
12 you have an opinion as to whether crocidolite and
chrysotile

13 have difference levels of carcinogens. I guess that's the
14 question.

15 MR. TIGERMAN: Q. That was the question.

16 A. My understanding is they are not all the same
17 potency.

18 Q. Do you know where tremolite falls on that
19 scale?

20 A. No.

21 Q. Are all amphiboles equally carcinogenic when
22 it comes to the cause of mesothelioma?

23 MR. EVANS: Same objection.

24 MR. TIGERMAN: Q. If you know.

25 A. I do not know.

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1 Q. If there are no naturally occurring veins of
2 of crocidolite in the United States and there is a
3 background level of crocidolite in the air, where is this
4 crocidolite coming from?

5 A. Well, I don't believe I said that the
6 background was all crocidolite. I said there was asbestos.
7 Q. Well, let me then, let's try to get on the
8 same track. Is there a background of crocidolite?
9 A. That I don't know. I don't think anyone has
10 differentiated the various fibers that are in the
11 background.
12 Q. Let's keep going through these articles.
13 Article No. 62, did that have anything to do with the
health
14 effects of asbestos?
15 A. No.
16 Q. Did it have anything to do with the
17 measurement either quantitatively or qualitatively of
18 asbestos fiber release from filters?
19 A. No.
20 Q. Article No. 119, what was that about?
21 A. That one was concerned with an asbestos-using
22 industry.
23 Q. And what was the industry?
24 A. They were making calking compounds that
25 contained asbestos.

Page 37

1 Q. Just, I hate to move back and forth. Article
2 No. 62, do you believe that that had the word "asbestos" in
3 it?
4 A. Article 62?
5 Q. Yes.
6 A. Does it have "asbestos" in it?
7 Q. The word "asbestos" anywhere in the article
to
8 your recollection?
9 A. Only in relation to the composition of the
10 filters.
11 Q. Article 119 sounds like it does deal with the
12 health effects of asbestos; is that true?
13 A. It deals with the engineering control of
14 asbestos.
15 Q. For health reasons?
16 A. Yes.
17 Q. And this was in the manufacture of a calking
18 product?
19 A. Yes.
20 Q. Did it measure the release of fibers in the
21 use of that product?
22 A. Did what measure it?
23 Q. Did you actually do -- what kinds of sampling
24 or measurements did you do in the course of this, the
course
25 of the background for the writing of this article?

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1 MR. EVANS: Objection, vague and ambiguous.
2 MR. TIGERMAN: Q: Did you do any research in
3 connection with the writing of this article?
4 A. No.
5 Q. Did you do any studies in connection with the
6 writing of this article?
7 A. Yes.
8 Q. What kinds of studies did you do?
9 A. I studied the process and studied the
10 engineering control methods that would be effective in
11 preventing the exposure of the workers to excessive
12 asbestos.

13 Q. Did you do air sampling?
14 A. Yes.
15 Q. And did you use electron microscopy?
16 A. No.
17 Q. Have you ever used electron microscopy?
18 A. Yes.
19 Q. What is the advantage of electron microscopy
20 over ordinary microscopy?
21 A. The advantage is you can see smaller fibers.
22 The disadvantage is that it's not relevant to health
23 exposures.
24 Q. Because the fibers that you can see with
25 ordinary microscopy are those that are greater than 5

Page 39

1 microns in diameter?
2 A. Well, because the standard for working
3 exposures have been based on the optical microscope
4 technique measurement.
5 MR. BRAKE: Is it diameter or lengths?
6 MR. TIGERMAN: Diameter.
7 Q. The requirement that an particle be 5
microns,
8 that is to be a measurable asbestos particle, that is a
9 diameter; is that correct?
10 A. Incorrect.
11 Q. It's length?
12 A. Length.
13 MR. BRAKE: I thought you misspoke. I always
14 thought it was length. I'm not trying to mess your
question
15 up.

16 THE WITNESS: It's length.
17 MR. TIGERMAN: Q: All right.
18 A. And the length-to-diameter ratio is 3 to 1.
19 Q. I see. Are you familiar with the Stanton
20 Hypothesis?
21 A. Not by that name.
22 Q. Are you familiar with any hypotheses that
sets
23 forth the theory that an asbestos particle must be of a
24 certain length-to-width ratio in order for it to be capable
25 of causing mesothelioma?

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1 A. Well, I understand what the hygienic size is
2 which we have just talked about.
3 Q. Okay.
4 A. Which is a minimum of 5 micrometers long and
5 3-to-1 ratio. And these are the ones with hygienic
6 significance.
7 Q. Are you aware of any of the medical research
8 upon which that may be based?
9 A. I've read some of it but this is not my area
10 of expert testimony.
11 Q. And what medical literature do you recall
12 reading which forms the basis for the standard in the
13 industrial hygiene community in terms of the size of an
14 asbestos fiber which is required for it to be measurable?
15 In other words, you don't measure all the
16 fibers, you only measure fibers of a certain size; is that
17 true?
18 MR. EVANS: Objection, vague and ambiguous.
19 THE WITNESS: I think you'll have to break it
20 up a little bit.

21 MR. TIGERMAN: Q. When an industrial
22 hygienist is ascertaining whether or not there is
respirable
23 quantities of asbestos in the air and what amount, they are
24 only measuring certain-sized particles; is that correct?

25 A. They measure all fibers greater than 5
Page 41

1 micrometers and longer in length. And then they have the
2 second restriction is that the diameter cannot be greater
3 than one third the length. And these are what I call
fibers
4 of hygienic significance or health significance.

5 MR. EVANS: Let's stop for a minute. Can we
6 take a five-minute break?

7 (Brief recess).

8 MR. TIGERMAN: Q. With respect to the
article

9 that we were last discussing, the one in which you did some
10 work in connection with a calking manufacturing process,
was

11 that at a particular facility that that work was done?

12 A. Yes.

13 Q. What facility?

14 A. It is located in Indiana and they were making
15 products that had a rather high asbestos fiber content.

And

16 the name of the company, I can't recall at the moment.

17 Q. Was it U.S. Gypsum, National Gypsum?

18 A. No, neither one. It's a company that makes
19 products for mobile home construction.

20 Q. I see. And this particular paper, this was a
21 peer-reviewed article; is that correct?

22 A. Yes.

23 Q. And did you as a result of the air sampling
24 that was done find that there was asbestos in excess of any
25 of the then existing threshold limit values?

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1 A. No.

2 Q. Did you find that there was any asbestos as a
3 result of the manufacturing process in excess of the
current

4 threshold limit values?

5 A. I can't recall the numbers. You'd I'd have
to
6 look at the article.

7 Q. That article had nothing to do with filters,
8 did it?

9 A. There was a filter on the exhaust system
which

10 captured whatever asbestos became airborne.

11 Q. Right, but did it have anything to do with
12 asbestos content of -- strike that.

13 Were you testing fiber release from filters?

14 A. No.

15 Q. You mentioned contract report No. 7. What is
16 a contract report?

17 A. It's a report that's written in response to a
18 grant for research activity and you give periodic reports
of
19 progress and a final report at the end of the project.

20 Q. And report No. 7 was a progress report
21 pertaining to air cleaning studies; is that correct?

22 A. Yes.

23 Q. And who funded that?
24 A. Atomic Energy Commission.
25 Q. And this was again one of these filters that

Page 43

1 you described earlier that had crocidolite asbestos blown
2 onto it?

3 A. Yes.

4 Q. And in the course of that report was there
any

5 attempt to ascertain the level of asbestos fiber release
6 from the filters?

7 A. No.

8 Q. Was there any discussion of the health
effects

9 of asbestos in that report?

10 A. No.

11 Q. And you said there's a book chapter that had
12 been omitted. Does that deal with the measurement of
13 asbestos fiber release from filters?

14 A. No, it has to do with the filters that were
15 developed and manufactured in the 1940s, 1950s for the
16 military and the Atomic Energy Commission that had a fiber
17 content of crocidolite.

18 Q. And did it discuss at all the health effects
19 of asbestos, that book chapter?

20 A. No.

21 Q. And it didn't attempt to ascertain in either
a

22 quantitative or qualitative sense the release of the
23 crocidolite fibers that were respirable from those
24 fibers; is that true?

25 A. It was not considered necessary.

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1 Q. And why do you say that?

2 A. Because filters do not shed their fibers when
3 they are correctly composed and constructed.

4 Q. And what do you mean by correctly composed
and

5 constructed?

6 A. Has the correct fiber diameters, has the
7 dispersion, has the other physical properties that assist
in
8 holding it all together.

9 Q. And what are the other physical properties
10 that assist in holding it together?

11 A. When fibers are very fine in diameter they
12 need to be supported on coarser fibers. On coarser
13 fibers. So that filters that have very small diameter,
14 asbestos fibers need to have coarser fibers on which to
15 disperse them.

16 Q. Any other factors that relate to the correct
17 construction of the filter that you haven't just listed?

18 A. Well, the composition of the various fiber
19 sizes is of great importance.

20 Q. Any other factors that you haven't mentioned?

21 A. No.

22 Q. Now for these contract reports that we've
been

23 discussing the grants that would be made, would they be
made

24 directly to you, some of them, or to your department or to
25 some other entity?

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1 A. Technically they are made to Harvard
2 University.
3 Q. To Harvard University for a specific purpose?
4 A. That's correct.
5 Q. With a specific researcher designated?
6 A. As principal investigator.
7 Q. And have you ever had any research grants to
8 Harvard University in which you were designated the
9 principal investigator where the funding came from some
10 entity affiliated with the tobacco industry?
11 A. No.
12 Q. Have you ever received any funding from the
13 tobacco industry for any research?
14 A. Yes.
15 Q. On how many occasions?
16 A. I was a subcontractor to the principal
17 investigator who got funding from the Tobacco Institute to
18 do animal studies.
19 Q. Who was the principal investigator?
20 A. His name was Gary Huber.
21 Q. Is that the only occasion when you've been a
22 subcontractor to a principal investigator who received
23 funding from the tobacco industry?
24 A. Yes.
25 Q. Have you ever directly or indirectly ever

Page 46

1 received any funding from the Council For Tobacco Research?
2 A. I'm not sure whether the money came from the
3 first entity or the second. What is the difference between
4 the two?
5 Q. Well --
6 A. I think it was the tobacco industry that gave
7 out research money. This was back in the 1970s.
8 Q. And that, was that in connection with a study
9 that was ultimately published?
10 A. Yes.
11 Q. And was it published in a peer review
journal?
12 A. Yes.
13 Q. And what article is that?
14 A. Well, there are several listed here. Huber
--
15 well, starting say on No. 79, for example, that would be
one
16 of the papers that came out of that.
17 No, I'm wrong about that one. Please cross
18 that out.
19 Q. Okay.
20 A. That one was funded by the American Lung
21 Association. But there were some later ones that were
22 funded by that. Yeah, number -- that's not the one either.
23 No. 102 would be one.
24 Q. Even though that's about marijuana smoke?
25 A. Yeah. That one was funded by the National

Page 47

1 Institute of Health. The No. 103 would be. No. 106 was an
2 out growth of that research. No. 107 -- no, that's not it.
3 No. 126, I'm not sure that these were all Tobacco
Institute.
4 Some were financed by the National Cancer Institute and
some
5 were financed by the Tobacco Institute.
6 And although the projects were kept separate

7 they are no longer separate in my mind. But those that I
8 mentioned were in that group where we were subcontracting
9 the principal investigator who got funds from several
10 different sources and gave us a budget for performing
11 certain functions that were part of the project.

12 Q. All right. Do you know who the Indoor Clean
13 Air Council is?

14 A. Indoor Clean Air Council, I don't know.

15 Q. Do you know who the Council For Tobacco
16 Research is?

17 A. Well, I believe that's the industry group you
18 mentioned. Is that not true?

19 Q. Actually I thought you had mentioned the
20 Tobacco Institute. There are a good number of these
21 different ones and I wanted to make sure when I talked
about

22 funding from the tobacco industry that we were including
all
23 of these.

24 A. No, there was only one group. I believe it
25 was the Tobacco Institute. I'd have to look that up. I'd
Page 48

1 have to look at the papers and see what the acknowledgment
2 would be on it.

3 Q. Are you familiar with any position taken by
4 the American Medical Association regarding the fact that
5 that doctors should not accept money from the tobacco
6 industry for the purposes of research?

7 MR. EVANS: Object to that, completely
8 irrelevant.

9 MS. ROENISCH: And argumentative.

10 MR. TIGERMAN: Q: Are you familiar with any
11 such position?

12 A. I don't know.

13 Q. Are you familiar with an edition of the
14 Journal of the American Medical Association that came out
15 this year which was devoted entirely to tobacco?

16 A. I have not read it.

17 Q. Have you read any positions by the American
18 Medical Association about whether doctors should currently
19 accept money for research from the tobacco industry?

20 A. No, I have not.

21 Q. When is the last time you accepted any money
22 from them?

23 A. In the 1970s were the ones I described and I
24 did not receive it directly.

25 Q. And can you tell me approximately how much
Page 49

1 monies were received directly and indirectly for any and
all

2 research done by you or participation by you in studies
that

3 were funded by the tobacco industry?

4 A. I can't recall that number.

5 Q. Would it be greater than \$100,000?

6 A. I can't recall.

7 Q. Can you give me a ball park estimate?

8 MR. EVANS: Objection, he said he can't
9 recall.

10 THE WITNESS: I can't recall what the funding
11 was at this point.

12 MR. TIGERMAN: Q. Could it be as high as a
13 million dollars?

14 MR. EVANS: Objection, he already said he
15 can't recall.
16 MS. ROENISCH: Argumentative and harassing
the
17 witness.
18 MR. TIGERMAN: Q: Go ahead.
19 MR. EVANS: If you can't recall, you can't
20 recall.
21 MR. TIGERMAN: Q: Currently you can't recall
22 whether it might be as high as \$20 million?
23 MR. EVANS: He testified he did not receive
24 the money directly.
25 MS. ROENISCH: Objection, you are arguing and
Page 50

1 harassing the witness. Knock off the line of questioning.
2 MR. TIGERMAN: Act civil, please, and let the
3 record reflect that counsel is raising her voice.
4 Q. Sir, I know you said you can't recall the
5 amount. All I'm trying to do is ascertain the amount which
6 you are sure it wasn't above.
7 A. I'm sure it wasn't above a hundred million.
8 Q. Okay. Is there any other number that you're
9 sure that the funding you received indirectly is not above?
10 MR. EVANS: I will object, he's testified he
11 can't recall. Instruct him not to answer. Move on.
12 MR. TIGERMAN: Q. Go ahead.
13 MR. EVANS: You don't have to answer that
14 question. Move on.
15 MR. TIGERMAN: Please mark that.
16 Q. Sir, I'm just talking about funding you
17 received either directly or indirectly for your
18 participation in these studies. And are you capable of
19 giving me any number lower than a hundred million dollars
20 which you are sure the funding you received either directly
21 or indirectly did not exceed?
22 MR. EVANS: Objection, he already testified
he
23 cannot recall a number. And continuing on this line of
24 questioning is just harassment.
25 MR. TIGERMAN: I can tell you I may not be

Page 51
1 able to recall how much money I made in 1985. I can tell
2 you it certainly wasn't above \$200,000. That's a
ridiculous

3 objection.
4 MR. EVANS: Any answer he gives you will be
5 necessarily speculation because he said he --
6 MR. TIGERMAN: Q: I'm asking if he can give
a
7 number which he is sure that the funding he received
8 indirectly did not exceed.
9 MR. EVANS: And he gave you a number. He's
10 answered the question.
11 MR. TIGERMAN: Q: Can you give me any number
12 closer than that?
13 MR. BRAKE: Why do you keep saying he got?
14 You're suggesting in your question that these people come
15 out and gave Dr. First money. Isn't the testimony that the
16 university he associated with received grants in the
17 ordinary course? So in the interest of fairness you ought
18 to clean that up, first of all.
19 And second of all, you should ask the
20 university you're associated with during the course of your

21 career, how much did you get funding from certain sources.
22 And if he says I can't tell you the you exact amount you
23 say, well, you should be able to tell me more
approximately.

24 Try that question. If it doesn't work you'll have to make
25 certain arguments, right. It seems logical to me to do it
Page 52

1 at that way.

2 MR. TIGERMAN: Q. With respect to the monies
3 you received, when you say the monies were received
4 indirectly those were monies received by Harvard; is that
5 correct?

6 A. All contracts are made with the university,
7 not with the individual principal investigator. In the
8 research that you're questioning me about I was not
9 principal investigator.

10 Q. Right.

11 A. I had a function in the activity for which
12 money was transferred to my department.

13 Q. When money is transferred to your department
14 for research in which you are involved do you ever derive
15 any direct pecuniary benefit?

16 A. I get my salary.

17 Q. And that's it?

18 A. That's it.

19 Q. If you bring in a billion dollar grant it's
of
20 no benefit to you pecuniarily in a direct sense; is that
21 correct?

22 A. That's correct.

23 Q. To the extent it comes to your department
that

24 pays for equipment and other things that might be of some
25 benefit to you in an indirect sense; is that right?

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1 MR. EVANS: Objection, argumentative.

2 THE WITNESS: Well, of course the money is
3 used for that purpose.

4 MR. TIGERMAN: Q. And with respect to the
5 research you were referring to where you were not the
6 designated primary investigator but you were a
7 subcontractor, was that grant to the principal
investigator,

8 was that also a grant to Harvard?

9 A. Yes. I explained to you that no individual
10 gets grants directly personally to them. They must come
11 through Harvard University.

12 Q. Right. Maybe I didn't make myself clear.
Was

13 the principal investigator employed by Harvard at that
time?

14 A. He would have to get a grant through Harvard.

15 Q. That was my question, did the grant come
16 through Harvard. And with respect to the money received by
17 your department where you were a subcontractor on that
18 project can you give me any estimate lower than a hundred
19 million dollars above which you are sure that that funding
20 did not occur?

21 MR. EVANS: Same objection. It's been asked
22 and answered. He said he couldn't recall.

23 MR. TIGERMAN: Q. Go ahead.

24 A. I don't believe it exceeded a million
dollars.

25 Q. Okay. Now, sir, with respect to your

Page 54

1 background were you ever a cigarette smoker?

2 A. Yes.

3 Q. And when did you stop smoking?

4 A. 1952.

5 Q. Did you ever smoke Kent Micronite filters?

6 A. No.

7 Q. Would you recommend putting crocidolite into

a

8 filter today?

9 A. No, I would not because nobody would buy it
10 with the bad name that asbestos has.

11 Q. Would that be the only reason why you
wouldn't

12 recommend it?

13 A. Yes.

14 Q. So if someone came to you and asked you
15 whether or not it would be a good idea to put crocidolite
in

16 a filter you would recommend against it solely for economic
17 reasons, not for health reasons; is that true?

18 A. That's correct.

19 Q. Do you believe that cigarette smoking can
20 cause disease?

21 MR. EVANS: Objection, beyond the scope of
his

22 designation, beyond the area of his expertise, and not to
23 mention it's irrelevant to the claims in this case.

24 THE WITNESS: Do you want me to answer?

25 (Discussion off the record).

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1 MR. EVANS: I don't think you have to answer
2 that. I'll instruct you not to answer.

3 MR. TIGERMAN: Please mark that. It goes to
4 bias, it goes to credibility.

5 Q. Do you believe that cigarette smoking has
been

6 associated with lung cancer?

7 MR. EVANS: Same objection and instruction.

8 MR. TIGERMAN: Please mark that.

9 Q. Do you believe that cigarette smoking has
been

10 associated with heart disease?

11 MR. BRAKE: Same objection and instruction.

12 MR. TIGERMAN: Q. Have you in the past
13 testified that cigarette smoking is only a possible
14 carcinogen?

15 A. I have not so testified.

16 Q. Have you ever testified --

17 MR. BRAKE: Can you give us a minute, okay?
18 (Discussion off the record).

19 MR. TIGERMAN: Q: Have you ever in the past
20 testified that asbestos is only an alleged carcinogen?

21 A. I have not testified to that effect.

22 Q. Have you ever given any testimony before
23 Congress or any court of law to the effect that you are not
24 convinced of the association between cigarettes and cancer?

25 A. I have never given such testimony.

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1 (Discussion off the record).

2 Q. Now when was it that you were first contacted
3 by anybody to do any research, investigation or study on

the

4 issue of Kent Micronite filters?

5 A. About four or five years ago.

6 Q. And who were you contacted by?

7 A. By the Law Firm of Shook, Hardy & Bacon.

8 Q. And they are the lawyers for Lorillard?

9 A. Yes.

10 Q. And at that time was what was your charge or
11 the request that was made of you?

12 A. To review the record and to give them an
13 opinion about what I thought the facts were in the case.

14 Q. Have you brought any materials today that you
15 have reviewed in the course of your work?

16 A. I did.

17 Q. Can I take a look at those?

18 We can make copies of those if we don't
19 already have them.

20 MR. EVANS: You may want to get started but I
21 believe you have everything that has been -- I take that
22 back. I can't really say you have everything because there
23 are some Post-it notes and some different things.

24 MR. TIGERMAN: All right.

25 Sir, the first document we'll mark as

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1 Plaintiffs' next in order is a two-page document.

2 (WHEREUPON, PLAINTIFFS' EXHIBIT 2
3 WAS MARKED FOR IDENTIFICATION).

4 MR. TIGERMAN: Q. What is this?

5 A. This is a memo regarding a report, telephone
6 report by a person by the name of Dr. Killian.

7 Q. And where did you get it from?

8 A. I got it from Shook, Hardy & Bacon.

9 Q. And could you read aloud the portion that
10 you've highlighted in yellow?

11 A. "Lots of a hundred each."

12 Q. Why did you highlight that?

13 A. So I would know how many cigarettes were used
14 in developing the information that's on the second page
15 which gives the results of the analysis.

16 Q. Are there other documents that pertain to
17 those notes?

18 A. Are you talking about these notes of Dr.
19 Killian?

20 Q. The entire document, is that a note of a
21 telephone conversation?

22 A. That is not a telephone conversation to me.
23 This is a telephone conversation in 1951 to someone at
24 Lorillard.

25 Q. Do you know whether those notes are of what

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1 was spoken by the writer or what was spoken by the person
to
2 whom the writer was talking to? In other words, are those
3 notes of what the writer said or what someone else said or
4 both?

5 A. My interpretation is that Dr. Killian called
6 someone at Lorillard and gave them this information. And
7 the person on the Lorillard side of the telephone was
making

8 notes as he got the information.

9 Q. All right. So that would be notes of a
10 conversation with Dr. Killian?

11 A. Yes.

12 Q. And do you know where those notes were kept
13 before they were given to you?
14 A. No.
15 Q. Do you know whether or not there were any
16 other conversations between those two persons which have
17 notes pertaining to them?
18 A. This is a second memo from Dr. Killian by
19 phone.
20 Q. Let's mark that as Plaintiffs' next in order.
21 A. This one is 11/20/51, and so it is later than
22 the one you have marked as Exhibit No. 2.
23 MR. TIGERMAN: Let's mark that one.
24 (WHEREUPON, PLAINTIFFS' EXHIBIT 3
25 WAS MARKED FOR IDENTIFICATION).

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1 MR. TIGERMAN: Q. Now first of all, what is
2 the significance of No. 2 to you? No. 2.
3 MR. BRAKE: Sort of vague. In what context,
4 in relation to some point he's going to give?
5 MR. TIGERMAN: Q. In relation to any
opinions
6 you're going to give in this case what is the importance of
7 Exhibit 2?
8 MR. BRAKE: I think that's vague.
9 THE WITNESS: It's significant to me these
10 were some tests made on cigarettes in the development of
the
11 Micronite filter.
12 MR. TIGERMAN: Q. And were these tests to
13 ascertain the level of fiber release of the asbestos in the
14 filter?
15 A. Yes.
16 Q. And why would somebody want to do that kind
of
17 test?
18 A. They would like to know if there was fibers
19 released. I assume that was the object.
20 Q. Why?
21 MR. EVANS: Objection, calls for speculation.
22 THE WITNESS: I can't read anybody's mind.
23 MR. TIGERMAN: You don't know why it was they
24 wanted to know this; is that correct?
25 A. I can speculate.

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1 Q. Do you know whether or not it related to
2 health concerns?
3 MR. EVANS: Objection, calls for speculation.
4 MR. TIGERMAN: Q. Do you know?
5 MR. BRAKE: The question is, Doctor, do you
6 know what the motivation was in that testing, and did that
7 testing specifically relate to health concerns, do you know
8 that?
9 THE WITNESS: I was not involved with that
10 personally so I don't know.
11 MR. TIGERMAN: Q. And is there anything in
12 Plaintiffs' Exhibit 2 upon which you rely in forming your
13 opinions in this case?
14 A. No.
15 Q. Is there anything in Plaintiffs' Exhibit 3
16 upon which you rely in forming your opinions in this case?
17 A. No.
18 Q. Is there any significance to Plaintiffs'
19 Exhibit 3 in connection with your opinions?

20 A. No.
21 MR. TIGERMAN: Let's mark as Plaintiffs' next
22 in order a three-page document which bears the date of
23 January 28, 1954 which is addressed to Dr. Harris Parmele,
24 P-A-R-M-E-L-E, Director of Research at P. Lorillard Company
25 Inc., apparently signed by David Kendall, K-E-N-D-A-L-L.

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1 (WHEREUPON, PLAINTIFFS' EXHIBIT 4
2 WAS MARKED FOR IDENTIFICATION).

3 MR. TIGERMAN: Q. What is that document?

4 A. This is a document addressed to the Director
5 of Research of Lorillard Company in 1954 and it recounts
6 tests of a number of different cigarettes for determining
7 whether or not there was fiber release.

8 No, this is not the one I thought it was.

9 Q. Okay. Do you know what that one is?

10 A. Let me check it. Yes, this is concerned with
11 chemical components in cigarette smoke.

12 Q. And with respect to the opinions you're
giving

13 in this case does that document have any information upon
14 which you relied?

15 A. No.

16 Q. Is there any significance to that document in
17 connection with the opinions you're rendering in this case?

18 A. No.

19 MR. TIGERMAN: Let's mark as Plaintiffs' next
20 in order a 10-page document on the letterhead of Dr. David
21 Kendall dated February 27, 1954.

22 (WHEREUPON, PLAINTIFFS' EXHIBIT 5
23 WAS MARKED FOR IDENTIFICATION).

24 MR. TIGERMAN: Q. What is that document?

25 A. This is a report to the Director of Research

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1 at Lorillard Company from a Dr. David Kendall, a consulting
2 chemist.

3 Q. Is there anything in that report upon which
4 you rely in relation to your opinions in this case?

5 A. No, there's nothing in there that I rely on
6 for my opinions.

7 Q. Is there anything in that report that you

find

8 significant with respect to the formation of your opinions?

9 A. There was some implication by the plaintiff
10 that these were significant documents to the Plaintiffs'
11 case. And therefore that's why they were sent to me.

12 Q. Is there anything in either, in either
13 Plaintiffs' No., what is it, 4 or 5, that you disagree with
14 that you take issue with?

15 A. The material in No. 4 I don't either agree or
16 disagree with. The material in No. 5 I believe was a
failed

17 experiment.

18 Q. Failed in what sense?

19 A. It didn't show what they were trying to do.

20 Q. What was it they were trying to do?

21 A. They were trying to determine whether there
22 were any fibers being released from the filter.

23 Q. And what do you mean, it didn't demonstrate?

24 A. The method used was not sensitive enough to
25 determine the information.

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1 Q. So in other words, there was a negative

2 finding but it was not significant because of the technique
3 being insensitive?
4 A. Yes, in my opinion the technique was not
5 adequate to make that determination.
6 Q. And what is it about the technique that was
7 inadequate?
8 A. It would not measure the desired information
9 at the level at which, at the level at which it would be
10 expected.
11 Q. With respect to Plaintiffs' Exhibit 5 did
this
12 research demonstrate any fiber release from the filters of
13 Kent Micronite cigarettes?
14 A. Well, that's a point of my comment. I don't
15 believe it could have.
16 Q. Did it purport to?
17 A. Well, it gave the results of the
18 investigation.
19 Q. And the results that it gives, does it
purport
20 to demonstrate there is release of silica or fibers from
the
21 filters of Kent Micronites?
22 A. It claims they could not find any.
23 Q. And again when you say that the technique was
24 inadequate, what technique could have been used at that
time
25 that would have been adequate?

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1 A. Well, I believe the investigation by electron
2 microscopy was sensitive enough to reveal the loss of
3 fibers.
4 Q. Did they have electron microscopy in 1954?
5 A. Oh, yes. Yes.
6 MR. TIGERMAN: All right. Let's go to
7 Plaintiffs' next in order which appears to be a chart that
8 says "Asbestos Threshold Limit Values."
9 (WHEREUPON, PLAINTIFFS' EXHIBIT 6
10 WAS MARKED FOR IDENTIFICATION).
11 MR. TIGERMAN: Q. Who prepared this chart?
12 A. I believe it was prepared by Mr. Brake; is
13 that correct?
14 MR. BRAKE: Ancient history. Well, do you
15 know who prepared it, as you asked?
16 THE WITNESS: Is it listed, is it mentioned?
17 MR. BRAKE: I don't think it says. Off the
18 record.
19 MR. TIGERMAN: No, stay on the record.
20 Q. Did you get it from Mr. Brake?
21 A. Either from him or his associate.
22 Q. And when did you receive that for the first
23 time?
24 A. Oh, must be a long time ago because the date
25 stops in 1982.

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1 Q. Is that your handwriting on this document?
2 A. Yes.
3 Q. Up in the upper left-hand corner can you read
4 what your notes are and tell me why you wrote those?
5 MR. EVANS: Objection, I believe you
misspoke.
6 MR. TIGERMAN: Q: Upper right-hand corner,
7 I'm sorry.

8 A. It says, "Notice of intended change to all
9 fibers 2.2." And then it says, "5" the chart just says
"5."
10 I've added mm, mu, meaning micrometers. And then under it
11 I've put "Aspect ratio" and I've abbreviated "aspect"
A-S-P,
12 "1 to 3."

13 Q. Why did you write that?

14 A. Just a reminder.

15 Q. All right. Is that a chart you've used in
16 testifying before?

17 A. No. I just use it for, to keep track of the
18 history, from 1946 on.

19 Q. When you were first consulted with Lorillard
20 about this you were already aware of the history of
21 threshold limit values; is that true?

22 A. Yes.

23 Q. Did they ask you to put together your own
24 chart?

25 A. No.

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1 Q. Do you know what information was consulted by
2 them in putting together this chart?

3 A. I don't believe Lorillard put it together. I
4 believe Mr. Brake and his associate put it together.

5 Q. And do you know whether those are ACGIH
6 threshold limit values or some other group's?

7 A. I'm pretty confident they ACGIH.

8 Q. This document is a document that says in the
9 top right-hand corner, "Chemical Laboratory 917," and goes
10 through Page 920. Let's mark it Plaintiffs' next in order.

11 A. Let me save you a little time and say there's
12 a set of three.

13 MR. TIGERMAN: And then we have another one
14 that's Bate stamped pages 00488423 through 00488425, and
15 another one that's Bate stamped 00488417 through 419. We
16 can go ahead and mark these as Plaintiffs' next in order.

17 (WHEREUPON, PLAINTIFFS' EXHIBITS 7A, 7B AND
18 7C WERE MARKED FOR IDENTIFICATION).

19 MR. EVANS: Are we going to make copies of
20 these so we can get them back here?

21 MR. TIGERMAN: Yes.

22 Q. With respect to 7A, 7B and 7C what are these?

23 A. This exhibit is three publications from the
24 American Journal, Journal of the American Medical
25 Association and they concern the testing of filters for tar

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1 and nicotine content. And some of the cigarettes that were
2 tested include the Micronite filter cigarette.

3 Q. Okay. And on 7C I believe it is that you've
4 actually done some highlighting?

5 A. Yes.

6 Q. With respect to 7A, 7B and 7C, first of all
is
7 there information which you relied on in the formation of
8 your opinions from any of those documents?

9 A. Yes.

10 Q. And what information do you rely on?

11 A. It's significant that the American Medical
12 Association tested the asbestos filter at that time and
made

13 no comment at all regarding the health hazard to smokers
14 from asbestos.

15 Q. Is that the only significance you draw from
16 any of these?
17 A. Yes.
18 Q. Would you have expected the AMA to make some
19 comment on asbestos in the filter if it had been believed
20 to be a possible health risk?
21 A. Had they believed it was a health risk I'm
22 sure they would have.
23 Q. And why do you think that?
24 A. Because their primary business is health.
25 Q. Do you know whether or not the American

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1 Medical Association did anything to ascertain the nature or
2 extent of asbestos fiber release from the Kent Micronite
3 filter?

4 A. I have no knowledge of that.
5 Q. And just for the record with respect to 7C
you

6 have highlighted the following. The first sentence in the
7 second paragraph starting with the word "as" and ending
with
8 the word "reproduceable," and you've also highlighted, I'll
9 come over your shoulder here. You've also highlighted some
10 information in the fourth paragraph in the second column on
11 the first page relating to Bradford and co-workers. Why is
12 it that you highlighted that information in that fourth
13 paragraph?

14 A. Because it defines the type of smoking
machine
15 that they were using and the cycle they were using. And I
16 found it to be of significance because it matched the
17 smoking cycle that we had used as well.

18 Q. And then you highlighted something in the
19 sixth paragraph in the second column that says, "... only
20 those cigarettes weighing 20 milligrams of this average?

21 MR. EVANS: I believe you misspoke, "within."

22 MR. TIGERMAN: Q. "Within 20 mg." Why did
23 you highlight that?

24 A. Because it was good technique. They did the
25 right thing.

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1 Q. On the last page you highlighted two columns
2 in Table 1, Brand B-1 and B-2. Are those the ones you
3 understood to be Kent Micronites?

4 A. Yes, because they are the only ones listed as
5 having asbestos.

6 Q. Now isn't it true that the, that the purpose
7 of this article was to measure the amount of nicotine that
8 was existent in the content of the smoke from these various
9 cigarettes?

10 A. Yes, they were measuring nicotine and tar.

11 Q. They weren't measuring asbestos, were they?

12 A. No.

13 Q. Are you aware of any study that was published
14 in any peer review journal other than Mr. Longo's in
15 attempts to ascertain the extent to which asbestos is
16 released from a filter on a cigarette which filter contains
17 asbestos?

18 A. I'm not aware of any other study.

19 Q. Do any of these articles, 7A, 7B or 7C make
20 any remark whatsoever on the particulate matter released by
21 the various types of filters other than this particulate

22 matter contained in the cigarette smoke itself?

23 A. No.

24 Q. These filters that were studied in these
three

25 papers were different content; is that correct?

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1 MR. EVANS: Objection, vague and ambiguous.

2 MR. TIGERMAN: Q. Some of the filters were
3 paper, some were fiber, some of the filters with cotton and
4 some were asbestos laminated with paper; is that true?

5 A. They were a variety I believe of all the
6 filter cigarettes that were available at the time the
7 testing was done.

8 Q. Did any of these studies or papers, 7A, 7B or
9 7C endeavor to measure the amount of particulate matter
10 released by the substances in the filters themselves?

11 A. Are you referring to tobacco particles or
12 what?

13 Q. No, the particles of the substance of which
14 the filter was comprised.

15 A. You're asking me if they measured anything
16 released from the filter no matter what its composition?

17 Q. Right.

18 A. To the best of my knowledge that's not
related
19 there.

20 Q. Okay. Have you spoken with any of the
authors
21 of these articles?

22 A. No, I have not.

23 Q. Have you looked for any of the background
24 information or research that gave rise to the writing of
25 these articles?

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1 A. I'm quite familiar with the development of
the
2 smoking cycle and so on. If that's what you mean.

3 Q. What I'm really wondering is whether or not
4 you're aware of a single document or a single note that was
5 generated in connection with this study as reflected in 7A,
6 7B or 7C which indicates that it was ever the charge of
7 anybody to ascertain whether or not the asbestos in the
8 filter was a health risk?

9 A. I am not aware that anyone had that
10 responsibility or the request.

11 MR. TIGERMAN: Okay. Let's go to Plaintiffs'
12 next in order which appears to be a news release from the
13 Bureau of Industrial Service.

14 MR. EVANS: If you're going to mark all of
15 these --

16 MR. TIGERMAN: Why don't we just take most of
17 this.

18 MR. EVANS: I think some of this stuff I'm
not
19 sure you want to mark it. Because a lot of this you may
20 have. Maybe not.

21 MR. TIGERMAN: Maybe.

22 MR. EVANS: Let's copy all of it, give him
23 back the original and mark the copy.

24 (WHEREUPON, PLAINTIFFS' EXHIBIT 8
25 WAS MARKED FOR IDENTIFICATION).

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1 (Discussion off the record).

2 MR. TIGERMAN: Q. Let's keep going then.
3 Sir, has anybody ever asked you to attempt to recreate the
4 filter that was the Kent Micronite filter that contained
5 crocidolite?
6 A. No.
7 Q. Are you aware of any efforts made by anyone
to
8 attempt to recreate that filter?
9 A. Make it from scratch?
10 Q. Yes.
11 A. No.
12 Q. Could it be done?
13 A. I think the patent papers would permit you to
14 do that, yes.
15 Q. In as much, I take it you disagree with the
16 results of the Longo study; is that correct?
17 A. I do disagree.
18 Q. If one were to attempt to accurately recreate
19 the asbestos particle release from the filter of a Kent
20 Micronite cigarette, I take it that one could not use a
21 cigarette from that era because of age and deterioration;
is
22 that right?
23 MR. EVANS: Vague and ambiguous.
24 MS. ROENISCH: Assumes facts not in evidence.
25 MR. TIGERMAN: Q. Could one do an accurate

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1 study on the fiber release of asbestos particles from a
Kent
2 Micronite filter using one of the original cigarettes from
3 the 1950s?
4 A. Possibly one could if the cigarettes had been
5 very carefully preserved in a constant temperature,
constant
6 humidity vault where cigarettes are preserved in some cases
7 for a number of years. That would be a possibility. But
8 before I would be satisfied to accept that I would want to
9 consult with an expert on cigarettes and cigarette tobacco
10 to verify that this was a correct conclusion.
11 Q. Unless one could find an ancient cigarette
12 that met your criteria, the only way in which to do a study
13 of this sort would be then to recreate a Kent Micronite
14 filter by using the patent; is that true?
15 A. I believe that would be correct, and then to
16 make the cigarettes that went with it so that the freshly
17 manufactured unit could be recreated.
18 Q. And do you have any idea of how much it would
19 cost to recreate a Kent Micronite cigarette using the
20 patent?
21 A. I think it would be quite costly because I'm
22 not sure you can do it in a small batch type. You'd have
to
23 use large quantities to get the right distributions and I'm
24 not sure about this but I assume they had a great deal of
25 machinery that was involved.

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1 Q. Do you know where the machinery that was
2 utilized to manufacture these cigarettes has gone to?
3 A. I have no idea.
4 Q. Do you know whether or not it's still at any
5 of the defendant's disposal?
6 A. I have no knowledge of that.
7 Q. Do you know whether or not the inventor of

the

8 filter is still alive?

9 A. Yes, I do, I know that.

10 Q. Is he?

11 A. He is.

12 Q. Have you ever spoken with that gentleman?

13 A. I don't think I've spoken to him in maybe 20
14 years.

15 Q. Have you spoken with him about the Kent
16 Micronite filter?

17 A. No.

18 Q. Have you ever spoken with him about asbestos?

19 A. If you mean by that the health effects of
20 asbestos, the answer is no.

21 Q. Anything about asbestos?

22 A. Well, he was highly involved in the
23 development of the military's asbestos-containing paper
that

24 was used by the military and the Atomic Energy Commission.

25 And in that work I had interaction with him.

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1 Q. Have you ever spoken with John Bullock?

2 A. No, not that I recall.

3 Q. Do you know who John Bullock was?

4 A. No.

5 Q. Have you ever spoken with anybody who worked
6 at the factory where these filters were manufactured?

7 A. Yes.

8 Q. And who have you spoken with?

9 A. Well, I of course talked with Newt, somebody
10 who we just recalled, and I'm familiar with a number of
11 people through the years who worked at that factory.

12 Q. Can you recount for me any of the
13 conversations that you've had with these people?

14 A. Well, frequently representatives of the
15 company would attend the Air Cleaning Conferences which I
16 arranged and conducted. And I would speak with them then.
17 And sometimes members of the company would give papers at
18 the Air Cleaning Conference on high efficiency filter
19 papers.

20 Q. These conversations you've had with
21 individuals who worked at the factory where the Micronite
22 filters were made, have any of those conversations touched
23 on the issue of asbestos particle release from a Micronite
24 filter?

25 A. No.

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1 Q. Have any touched on the method of manufacture
2 of a Micronite filter?

3 A. No.

4 Q. Have any touched on the health effects of
5 asbestos?

6 A. No.

7 Q. Have you ever written any articles where you
8 modified a standard cigarette smoking machine?

9 A. I haven't written any articles but I have
10 modified smoking machines.

11 Q. And what would be the purpose of modifying a
12 cigarette smoking machine?

13 A. For the purpose of preparing them for animal
14 exposure to cigarette smoke.

15 Q. Did you consider those, the results of those
16 studies to be valid even though modified with the standard

17 cigarette smoking machine?
18 A. Absolutely.
19 Q. Did you ever participate in the writing of a
20 paper on "A Method for Measuring Respiratory Deposition of
21 Cigarette Smoke During Smoking"?
22 A. That's the one that Hinds and I participated
23 in?
24 Q. Yes.
25 A. I would have to say yes.

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1 Q. Was this a study where a standard cigarette
2 smoking machine was modified?
3 A. That was not done with a smoking machine.
4 Q. What was that done with?
5 A. That was done with the individuals who smoked
6 the cigarette in their normal way. May I see that paper
for
7 a moment to verify what I think it is?
8 (Discussion off the record).
9 MR. TIGERMAN: I want the record to reflect
it
10 is now quarter of 5:00. The counsel for defendants are
11 insisting on taking yet another break. I want the record
to
12 reflect that I previously advised counsel I had prior
13 commitments this evening. I'm willing to stretch out to
14 5:30 at the latest. However, I know I will not be
completed
15 by that time.

16 I want the record to reflect efforts were
made
17 to secure this witness's attendance at an earlier hour
18 because of the time constraints that existed by virtue of
19 the fact this is a Friday evening. I want the record to
20 reflect I have expressed my concerns to counsel and have
21 even expressed a willingness to continue the deposition of
22 this witness by telephone.

23 I would like the record to further reflect
24 that counsel are resisting any efforts to depose this
25 witness to conclusion and counsel have indicated they will

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1 resist any efforts to depose this witness fully and
2 completely and fairly as we believe he should be deposed.

I
3 have at least two to three hours to go. I will not stay
4 until 7:00 or 8:00 o'clock at in the evening.

5 MR. BRAKE: There is a lot of reasons why.

6 MS. CHABER: Mr. Ohlemeyer me asked me to

take

7 this witness at this particular time so he would not have
to
8 fly out more than one time, and we are willing to continue
9 this by telephone.

10 I will also note there were documents

produced

11 at this deposition that I want copies of because they have
12 handwriting of this witness on, that I asked Mr. Ohlemeyer
13 if there were any reports that this witness prepared,
14 whether in this case or any other case, and I was told that
15 there were not. And there's handwriting and notes all over
16 the place here. We are entitled to that in advance. It
17 would have made this go faster if I had that in advance.

18 We will continue this by telephone so that

the

19 witness doesn't have to come out here on another occasion
at
20 his convenience. But to cut off our rights to a deposition
21 after two hours of a witness we have never seen before in
22 our lives --

23 MR. BRAKE: You listened to him in court.

24 MS. CHABER: I was there for four and a half
25 minutes. I have a job to do and it doesn't include sitting
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1 in court listening to a witness testify in another case.

2 MR. EVANS: There is no reason to argue about
3 this. We're going to take a five-minute break. How late
4 are you prepared to go?

5 MR. TIGERMAN: If you want to stay til 5:30.

6 But I don't believe it's a full and fair
7 opportunity --

8 MR. BRAKE: Stop trying to commit people to
9 positions.

10 MR. TIGERMAN: Are you willing to commit?

You

11 showed up a half hour late and you gave me a baloney excuse
12 about the fact that you thought that this deposition was
13 going to start at 2:30 when you knew it was going to start
14 at 2:00 o'clock. You showed up late. You are preventing
us
15 from having a full and fair opportunity to depose this
16 witness.

17 MR. BRAKE: If you have a reasonable
proposal,

18 but you spent two hours going over his curriculum vitae.

19 MS. CHABER: We're entitled to go into his
20 credentials. We're entitled to go into all sorts of
21 background information on the witness. We're not limited
to

22 saying what do you believe is your opinion on something.

23 MR. BRAKE: I understand.

24 MS. CHABER: You've taken Hammar's deposition
25 seven times and you kept him in deposition for four hours.

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1 MR. EVANS: There is no reason to argue.

2 This has not been produced yet and it may not
3 be.

4 MR. TIGERMAN: These are the documents he
said

5 he brought with him and you are not going to take them
away.

6 MS. CHABER: Those are his handwritten notes
7 on there. There are these notations on the documents he
8 went through, and we are not being provided all the
9 materials. That expert notice that I served says
everything

10 that the witness has read, reviewed, relied upon or been
11 provided to him by counsel. That includes everything in
12 that pile.

13 MR. EVANS: That's not what the notice says
14 but that's okay.

15 MR. TIGERMAN: The witness pointed to this
and

16 I'm going to state for the record I want to read right now
17 what those are into the record.

18 MR. EVANS: The witness brought these with
19 him.

20 MS. CHABER: To preserve our rights --
21 MR. TIGERMAN: If you take any out I want to
22 know them. Are you going to tell me under oath --
23 (Discussion off the record).
24 MS. CHABER: Mr. Brake is willing to make a
25 compromise here.

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1 MR. BRAKE: Whatever that pile is, Mark, you
2 may have a difference position, whatever it is, that pile
3 will stay intact and be dealt with. If there's an alleged
4 privilege it's not waived. But that pile will remain.
5 MR. TIGERMAN: Is it agreed no documents will
6 be taken out of this pile?
7 MS. CHABER: No tabs, no notes will be taken?
8 MR. BRAKE: The pile will remain inviolate

and

9 we'll deal with any privilege issues that exist.
10 As far as what you want to do in the future,
11 make a proposal, but I don't think it's fair to yell at the
12 doctor.

13 MR. TIGERMAN: We're not yelling at the
14 doctor.

15 MR. BRAKE: Finish the deposition in a way
16 logical and fair to the doctor, but I don't think it's fair
17 to ask him about his articles and don't get to the opinions
18 we when he expressed them in court this morning.

19 MS. CHABER: I have no obligation when
20 somebody is being offered for deposition to go and sit in
21 some other courtroom to listen to their testimony in lieu
22 of
23 my rights to take his deposition.

24 MR. BRAKE: You're not being all that
25 reasonable.

MS. CHABER: This was an accommodation. Phil

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1 said will you do me a favor, can I bring him out one time.
2 And I said this was okay, we would try to work it out so
the
3 doctor did not have to fly out on another date solely for
4 the deposition. How is that not being accommodating?

We're

5 offering, if it needs to be continued, to do it by
6 telephone. What could be more accommodating?

7 MR. EVANS: We're not saying we're not doing
8 it that way.

9 MS. CHABER: I did hear that remark.

10 MR. EVANS: We're not saying we will, we're
11 not saying we won't.

12 MR. TIGERMAN: And you can point to the
record

13 where you believe the questioning was unreasonable in your
14 effort to resist this.

15 MR. BRAKE: See you tomorrow.

16 MR. TIGERMAN: We're taking a five-minute
17 break.

18 (Brief recess).

19 MR. TIGERMAN: Let's go back on the record.

20 Q. On the record. Sir, on the back page of the
21 William Longo deposition in the matter of Newman versus

Abex

22 could you read your handwritten notes into the record?

23 A. "Representative sample, question mark.

24 Cigarette history, question mark. Extreme

25 variability in analytic results. An

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1 indication of poor preservation inasmuch as
2 all cigarettes in a single pack should be
3 very much alike. Ask Alex for data on
4 variability of cigarettes in a single pack,
5 question mark. Effect of tar in smoke
6 conceded as reducing particle release.
7 Longo's controlled experiment with non-Kent
8 cigarettes. Why is he looking for asbestos
9 fibers from a cigarette that he knows
10 contains none. Going to a lot of trouble to
11 prove the obvious. How inept to conduct a
12 blank run without cleaning apparatus,
13 January '94 tests. Also trying to measure
14 filter alone with a pressure gauge, 0 to 250
15 millimeters with cigarette only 5 percent of
16 the gauge, i.e., 12 and a half millimeters,
17 and then reporting 0, and effectively no
18 increase."

19 Q. All right. When you say how inept to do a
run

20 without cleaning, what was that sentence again, the inept
21 sentence?

22 A. "... to conduct a blank run without cleaning
23 apparatus, January '94 test."

24 Q. How do you know he didn't clean the
apparatus?

25 A. He must have said so in the text. Otherwise

I

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1 would not have that idea at all.

2 MR. TIGERMAN: Why don't we mark this
document

3 as Plaintiffs' next in order. This is the deposition of
4 Longo in the Newman case and I will instruct copies be made
5 of the back page that has his handwriting on it.

6 (WHEREUPON, PLAINTIFFS' EXHIBIT 9
7 WAS MARKED FOR IDENTIFICATION).

8 MR. TIGERMAN: Next we will mark a packet
that

9 states it is from Materials Analytical Services, Inc. And
10 it bears a handwritten notation at the top that says
11 10/21/94. It has tags on a couple of pages, a page that
has

12 the heading "Kent Micronite Study Summary of Results," with
13 some handwriting and a cross-out.

14 It has another tag on a page that says
15 "Materials Analytical Services Air Sample Analysis," and
the

16 sample number is M-11657-1. It says at the bottom, "Total
17 Asbestos Concentration Str/cc: 43.05."

18 And then the next one is a sample M-11657-2
19 and down under "Asbestos Concentration Str/cc: 119.30."

20 Let's mark this document as Plaintiffs' next
21 in order.

22 (WHEREUPON, PLAINTIFFS' EXHIBIT 10
23 WAS MARKED FOR IDENTIFICATION).

24 MR. TIGERMAN: The next document is a Project
25 Summary in the EPA, Environmental Protection Agency. Page

7

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1 is tagged, and highlighted is the sentence:

2 "We have arbitrarily chosen .3 microns
3 as the smallest size particle visible with
4 PCM."
5 Let's mark that next as plaintiff next in
6 order.
7 (WHEREUPON, PLAINTIFFS' EXHIBIT 11
8 WAS MARKED FOR IDENTIFICATION).
9 MR. TIGERMAN: The next is a deposition of
10 Doug Fowler, Ph.D. in the Newman case.
11 (WHEREUPON, PLAINTIFFS' EXHIBIT 12
12 WAS MARKED FOR IDENTIFICATION).
13 MR. TIGERMAN: The next is a packet which is
14 from Materials Analytical Services, has "10/21/94 - 0.75
15 hour" I presume, and it also has some color Xeroxes
attached
16 to it. And we'll mark that as Plaintiffs' next in order.
17 (WHEREUPON, PLAINTIFFS' EXHIBIT 13
18 WAS MARKED FOR IDENTIFICATION).
19 MR. TIGERMAN: The next is a document which
20 appears to be from the Federal Register, Volume 52 No. 210.
21 Its's got an orange tag on page 41859. Also three small
22 pieces of blue paper attached with handwriting. And we'll
23 mark that as Plaintiffs' next in order.
24 (WHEREUPON, PLAINTIFFS' EXHIBIT 14
25 WAS MARKED FOR IDENTIFICATION).
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1 MR. TIGERMAN: Next in order we have a
2 two-page draft of a letter from Melvin First, Ph.D., dated
3 May 30, 1995 with a yellow sticky at the top right-hand
4 corner.
5 (WHEREUPON, PLAINTIFFS' EXHIBIT 15
6 WAS MARKED FOR IDENTIFICATION).
7 MR. TIGERMAN: The next is a deposition of
8 William Longo Ph.D. in the Newman case. It has two blue
9 tags on it and we will copy the tags as well.
10 Q. Sir, could you read these tags aloud into the
11 record?
12 A. The first one says, "The protocol was
13 criticized for more than nonuse of smoking machine."
14 The second one said, "Compare numbers on
total
15 release per cigarette --"
16 Q. Can't read your own writing?
17 A. Yes. To compare. Oh, fiber -- oh, "Total
18 release per cigarette rather than cc to compare 2 puff
19 versus 8 puff 4 to 1."
20 MR. TIGERMAN: Let's mark that Plaintiffs'
21 next in order.
22 (WHEREUPON, PLAINTIFFS' EXHIBIT 16
23 WAS MARKED FOR IDENTIFICATION).
24 MR. TIGERMAN: The next document which we'll
25 mark as Plaintiffs' 17 is the deposition of William Longo
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1 Ph.D., Volume II which goes up to Page 266.
2 (WHEREUPON, PLAINTIFFS' EXHIBIT 17
3 WAS MARKED FOR IDENTIFICATION).
4 MR. TIGERMAN: All right. Next in order we
5 have the Killian notes, this is the one-page document but
it
6 appears to have some handwriting on it so we'll mark it as
7 well, handwriting different than the original which is in
8 pencil here.
9 (WHEREUPON, PLAINTIFFS' EXHIBIT 18

10 WAS MARKED FOR IDENTIFICATION).
11 MR. TIGERMAN: Q. Sir, can you read aloud
the
12 writing in pencil on Plaintiffs' No. 18?
13 A. The first note says, "Now he understands that
14 asbestos is a silicate."
15 Q. And the next?
16 A. "Why does he get 5.1 milligrams ash from
17 the smoke of 200 nonfilter cigarettes and
18 0.075 milligrams ash from the smoke of 1,000
19 cigarettes?"
20 And it says:
21 "Why does he get 1.1 milligrams ash from
22 200 filter cigarettes and zero from 1000
23 cigarettes?"
24 Q. And why did you write that?
25 A. It was just questions which occurred to me as

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1 I was reading it.
2 Q. Did those questions to you give rise to any
3 issue about whether or not these were reliable results?
4 A. Also as I testified earlier I characterized
5 this as a failed experiment.
6 MR. TIGERMAN: And again next in order as 19
7 will be the two-page -- actually rather than re-mark the
8 Killian by phone 11/9/51 documents why don't I have you
read
9 aloud the note.

10 Q. What is the handwritten note you have on that
11 topic?
12 A. "Ash assumed to be asbestos and called
13 silica?"
14 Q. Why did you write that?
15 A. Because he seemed to be mistaken that what he
16 was looking for was silica which is SiO₂ as opposed to an
17 asbestos fiber which is silicate.

18 MR. TIGERMAN: Let's mark this two-page
19 document as 19 just to be safe.

20 (WHEREUPON, PLAINTIFFS' EXHIBIT 19
21 WAS MARKED FOR IDENTIFICATION).

22 MR. TIGERMAN: Let's mark as Plaintiffs' 20 a
23 document that says "Materials Analytical Services Air
Sample

24 Analysis" in the upper right-hand corner. It has a note of
25 6/14/94 in pencil. Also it should be noted on the second

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1 page on this document there is a circling at Line 5, Line
7,
2 Line 16, Line 20. On the next page there is a circling or
3 some marking on Lines 27, 28, 29, 32, 38, and that that is
4 in red pencil.

5 (WHEREUPON, PLAINTIFFS' EXHIBIT 20
6 WAS MARKED FOR IDENTIFICATION).

7 MR. TIGERMAN: Q. Sir, although I'm not
going

8 to have a chance to ask you about all these documents in
the
9 detail I would wish presently, why is it at least for the
10 purposes of getting some superficial understanding of what
11 you did, why is it that you circled certain of these items
12 in red?

13 A. These, the red is not significant. It's the
14 circling that's significant. Because each of the results

15 signifies a fiber that would not be visible under phase
16 contrast microscopy.

17 MR. TIGERMAN: Next in order is Plaintiffs'
18 No. 21. It appears to be a letter from to Dan Childs from
19 Mike Rigler with a "Kent Cigarette Project" report
attached.

20 (WHEREUPON, PLAINTIFFS' EXHIBIT 21
21 WAS MARKED FOR IDENTIFICATION).

22 MR. TIGERMAN: Q. Could you read your
23 handwritten notes on the cover of this document, please?

24 A. "The first and foremost requirement of a
25 sampling program is to obtain a

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1 representative sample. Lacking assurance of
2 a representative sample, all subsequent
3 operations no matter how elegant or costly
4 are futile because the information developed
5 will be forever suspect. 9 cigarettes out of
6 11 plus billions is like standing in a
7 doorway in Philadelphia and taking the first
8 five people who pass by as representing the 5
9 billion population. But this does not end
10 the lack of representativeness because these
11 were 35-year old cigarettes without chain of
12 custody record. Shrunk packages.
13 Humidification is not equivalent to
14 restoration."

15 Q. Okay.

16 A. It's got some more here.

17 Q. All right.

18 A. You're giving me a hard chore reading my own
19 writing. It's gotten so dim I can hardly see it. The
20 second rehumidification. That word I gave you is
incorrect.

21 Should be, "Rehumidification does not signify restoration
of
22 of rehumidified --" it's gotten too dim. I can't read it.

23 "The primary goals of sampling are to
24 obtain a representative sample and to
25 maintain sample integrity. All photos logged

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1 into data records should be produced. See
2 records of original data including SAED
3 patterns. Should we make available, and
4 should be made available in clearly
5 identifiable detail."

6 MR. TIGERMAN: Next in order we have what
7 appears to be -- next in order I'm going to put this
clipped

8 group of documents. December 17, 1953 letter, the letter
to

9 Parmele dated January 28, 1954, noting that the fourth
10 paragraph from the bottom on Page 3 has everything
11 highlighted except the sentence, "Silica in the state has a
12 very strong absorption another 1090 cm."

13 A letter to Halley, H-A-L-L-E-Y, dated
14 February 12, 1954, with highlighting at No. 2 on Page 1.
15 No. 2 and 3 on Page 2.

16 A letter to Dr. Fullam dated February 12,
17 1954, a letter to Parmele dated February 27, 1954 with
18 attachments, and a letter to Knudson dated December 1,
1954,

19 which apparently contains some tables. Let's mark that as

20 Plaintiffs' next in order.
21 (WHEREUPON, PLAINTIFFS' EXHIBIT 22
22 WAS MARKED FOR IDENTIFICATION).
23 MR. TIGERMAN: Let's mark as Plaintiffs' No.
24 23 the Hallgren, H-A-L-L-G-R-E-N, testimony from the Frost
25 versus Abex case. The date of this is January 6, 1994.

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1 (WHEREUPON, PLAINTIFFS' EXHIBIT 23
2 WAS MARKED FOR IDENTIFICATION).
3 MR. TIGERMAN: And it appears to be just
4 Hallgren.
5 Q. Did you read this testimony, sir?
6 A. Oh, yes.
7 Q. And did you discern anything from it that you
8 consider to be of significance?
9 A. Yes.
10 Q. And what did you discern from that?
11 A. I analyzed the data that he was talking about
12 and came to some conclusions regarding the validity of the
13 information.
14 Q. And what conclusions did you come to
regarding
15 the validity of the information?
16 A. My analysis suggested that the few fibers
that
17 they did find were possibly contamination or background
18 contamination.
19 Q. From where?
20 A. From all sorts of places, from the materials
21 they were using, from the air, from materials of the
22 building they were in. Unknown.
23 Q. And what were the calculations that you made?
24 A. They measured -- pardon me. They enumerated
25 the number of fibers they had found over a certain number
of

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1 grid spaces on their electron microscope target. And using
2 those numbers I calculated what the average number of
fibers
3 per square would be and compared that with the, an EPA
4 contamination level that they tolerate.
5 Q. And found it to be no higher than background?
6 A. Found the number of fibers they had found to
7 be less than the contamination level that EPA permits.
8 Q. Do you know where this contamination came
9 from?
10 A. From all sources. It's the general
background
11 that's in the air at all times.
12 Q. What they found was just asbestos that was
13 naturally in the air?
14 A. That was a possibility.
15 Q. Was it a probability?
16 A. Quite likely.
17 Q. Better than 50 percent probable?
18 A. Mm-hmm, yes.
19 Q. Better than 80 percent probable?
20 A. I think that's as far as I would go with it.
21 Q. 50 percent, yes?
22 A. (Nods head).
23 Q. You can't just nod on the record.
24 A. I thought I did say yes.
25 MS. ROENISCH: I believe that was his

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1 testimony, he said more than 50 percent.

2 MR. EVANS: Better than 50 percent.

3 MR. TIGERMAN: Q. Is better than 50 percent
4 the best you can say?

5 A. That's my current estimate.

6 MR. TIGERMAN: Okay. The next document
7 appears to be U.S. Patent 2,793,572, and it's Bate stamped
8 85670420, and this runs all the way through Bate stamp
9 No. 85670426.

10 (WHEREUPON, PLAINTIFFS' EXHIBIT 24
11 WAS MARKED FOR IDENTIFICATION).

12 MR. TIGERMAN: The next is a single page from
13 an article entitled "Designing and Constructing the Next
14 Generation of HEPA Filters," H-E-P-A, from
15 Microcontamination, December 1993, Page 31.

16 (WHEREUPON, PLAINTIFFS' EXHIBIT 25
17 WAS MARKED FOR IDENTIFICATION).

18 MR. TIGERMAN: With respect to Plaintiffs' 25
19 is this something you copied?

20 A. Yes, I copied it.

21 Q. Why did you copy it?

22 A. Probably for the historic review.

23 Q. Why didn't you copy the entire article, was
24 there a reason?

25 A. I don't know that I didn't, but somehow it's

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1 not here. That may have been the only page that was of
2 interest.

3 Q. And what was of interest on this page?

4 A. The historic information.

5 Q. Okay.

6 A. I would recommend that you discard that as
7 being of any significance in this action.

8 Q. You don't rely on it?

9 A. No.

10 Q. All right. As far as your article that you
11 wrote with Hinds entitled "A Method for Measuring
12 Respiratory Deposition of Cigarette Smoke During Smoking,"
13 did you use a standard cigarette smoking machine for this?

14 A. No, this was not an artificial cigarette
15 smoking machine, that was one where people smoked as they
16 normally would and we measured the retention and other
17 aspects of their smoking patterns.

18 Q. What is the purpose of a standard cigarette
19 smoking machine?

20 A. So people can reproduce experiments that are
21 done by others. There was complete chaos in the field of
22 biological effects from cigarette smoke in the 1960s and by
23 the early 1970s. People in the field began to realize that
24 they needed to standardize so that everybody would be doing
25 the same.

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1 And this goes along with the same idea of
2 using a research reference cigarette so everybody would
have

3 available the same material instead of going down to the
4 corner store and buy Old Golds one day and Chesterfields
the

5 next day and so on. So it was standardization.

6 Q. So in fact the purpose of these standardized
7 smoking machines is not to emulate smoking behavior, is it?

8 A. Yes, that was the idea. The idea was to try

9 to get an average of what people inhaled in volume and
time,
10 and also the frequency with which they smoked each puff.
11 Now I'm not familiar with the population they surveyed on
12 this. But somebody made that determination.

13 Q. Do you know whether that determination is
14 accurate?

15 A. If you read, and I'm not urging you to do so,
16 the article that Hinds and I put together there, you'll see
17 that the people we measured used a puff volume more like 50
18 ml instead of 35.

19 Q. So you found actually that the people you
20 surveyed had a higher volume than in the standardized
21 smoking machines?

22 A. But there could be an explanation for this
23 because this was an era when they were reducing the
nicotine
24 content of cigarettes and advertising them as low nicotine.
25 One of the results of this, people who were confirmed

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1 smokers had to smoke more cigarettes to keep the nicotine
2 levels up. And one of the things you can do is inhale more
3 deeply and retain the smoke longer so you extract more
4 nicotine from each puff. So that may be an explanation for
5 that.

6 Q. What was the level of nicotine in the
7 cigarettes that were used in the Hinds first study?

8 A. We were trying to find out precisely what
I've

9 just gone over by using unmarked cigarettes that had had
10 nicotine content that only we knew, and we were trying to
11 learn how many cigarettes these people would smoke in
12 comparison to higher nicotine cigarettes.

13 You see, we put them on two-week regimes and
14 we had low, medium and high nicotine cigarettes. They all
15 looked alike but we would issue them their cigarettes and
16 they had to come back with the butts every week.

17 Q. The high nicotine cigarettes, what was the
18 average flow rate?

19 A. I don't recall.

20 Q. What was the flow rate for the high nicotine
21 cigarettes compared to a Kent Micronite filter in the
1950s?

22 A. I don't know.

23 Q. Do you believe that standard smoking machines
24 are an accurate reflection of smoking behavior?

25 A. I believe that they are a standardized
average

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1 smoker.

2 Q. Now is it true that one of the criticisms you
3 have of the Longo study is the manner in which the
4 cigarettes were handled?

5 MR. EVANS: Objection, vague and ambiguous as
6 to what you mean by the Longo study.

7 MR. TIGERMAN: Q. Do you have any criticisms
8 of Dr. Longo's research with respect to the fiber release
of

9 Micronite filters in terms of the way the filters were
10 actually handled?

11 A. There were two objections: One, the way the
12 filters were handled before he got them; and second, the
way

13 he handled them in his experiment.
14 Q. You used to be a smoker, right?
15 A. Yes.
16 Q. Did you ever when you wanted to get a
17 cigarette out of a pack tap it on your hand?
18 A. Surely.
19 Q. Did you ever when you took a cigarette out of
20 a pack tap it on a table?
21 A. If it were loose.
22 Q. Do you know whether or not the tapping of a
23 pack or tapping of a cigarette is sufficient to dislodge
any
24 of the asbestos particulate matter within the filter?
25 A. I would say you would have to qualify that in

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1 terms of how vigorously you tapped it or how much you
2 squeezed it or what have you. So that it's entirely
3 possible to destroy the cigarette if you put enough energy
4 into the distortion.
5 Q. Did you ever, when you were smoking a
6 cigarette did you ever smoke while you were doing things
7 with both of your hands?
8 A. Certainly.
9 Q. Did you ever smoke while a cigarette dangled
10 from your mouth?
11 A. Yes.
12 Q. Did you use your teeth to hold a cigarette?
13 A. Probably not.
14 Q. Do you know whether smokers ever hold a
15 cigarette with their teeth?
16 A. I think some do.
17 Q. What would that do to a filter?
18 A. It would depend on how tightly you clamped
it.
19 If you held it lightly the effect would be zero. If you
20 tried to bite it in half I think you could destroy the
21 filter and have it spill out into your mouth.
22 But I would go on to say that the fact that
23 you get it in your mouth is not an important point. The
24 important point is getting it in your lungs.
25 Q. I understand. Just to follow up on that

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1 point, do you believe that a person biting on a filter to
2 hold it in their mouth is capable of dislodging asbestos
3 fibers which became respirable?
4 A. No.
5 Q. And why not?
6 A. Because if the fibers were dislodged they
7 would fall in the mouth, and obviously this is not a
8 pleasant sensation so you would spit them out.
9 Q. So you believe that the fibers that would be
10 dislodged from biting on a filter would be such that there
11 would be so many fibers dislodged that it would cause a
12 sensation within the mouth?
13 A. Yeah.
14 MR. EVANS: Objection, that's not what he
15 said.
16 MR. TIGERMAN: Q. Go ahead. You can answer.
17 A. What I'm saying, if you bite on the filter
18 you'll dislodge chunks that will be clearly perceptible in
19 your mouth.
20 I don't know if you ever smoked nonfilter
21 cigarettes but a characteristic of people who smoke

22 nonfilter cigarettes is every once in a while they will put
23 their finger on their tongue and take a piece of tobacco
24 out.

25 Q. But if a person were to bite on a filter to
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1 hold it in their mouth like this, you don't think that can
2 dislodge filters?

3 A. No. It can dislodge chunks that will fall in
4 the mouth, but keep in mind what I said about getting
fibers

5 airborne. You can't do it at 70 feet per minute.

6 Pardon me. Let me clarify that a little
7 further. We're now talking about fibers that are
8 respirable. We're talking about tiny fibers that are able
9 to be air entrained into the lungs.

10 Q. Well, isn't the issue of whether or not
11 respirable fibers can be dislodged from the filter of a
12 Micronite, isn't that in part dependent on the integrity of
13 the filter?

14 A. Well, I would say again to you that small
15 fibers adhere to the larger fibers and to each other. And
16 if you light a cigarette, the very first puff that comes
17 through the filter, any filter is saturated with hot water
18 vapor and tar and it deposits in the cold filter. So now
19 you have something to cement the whole thing together.

20 Q. Are you aware of anybody who when they smoke,
21 people who fiddle with the cigarette and role it around in
22 their hands?

23 A. Yes, as a matter of fact if you read Longo's
24 first report he did that. He squeezed them and he rolled
25 them. And he was presumably trying to simulate the kinds
of
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1 things that some smokers do do.

2 Q. Have you ever seen a smoker do that roll a
3 cigarette around?

4 A. Certainly.

5 Q. And you don't believe that will affect the
6 integrity of the composition of the filter?

7 A. No, no, the filter, the Micronite filter was
8 already compressed into the end of the cigarette in a
9 wrapper. So rolling it doesn't do anything to it. If you
10 do anything at all you further compress it.

11 MR. TIGERMAN: Let me go ahead and give the
12 rest of these documents for copying. We're at 5:30 right
13 now.

14 MR. EVANS: I think what we can do, if you
15 will send those, the originals to Cynthia's office, what
I'm
16 suggesting instead of we wait around for copies back.

17 MR. BRAKE: Can we go off the record?

18 MR. TIGERMAN: We'll do it all on the record.

19 MR. BRAKE: We're trying to be helpful.
We're

20 trying to say we will come tomorrow for Powell's deposition
21 and you can give us the originals.

22 I'm just trying to help you out.

23 MR. TIGERMAN: Putting it on the record is no
24 offense.

25 MR. EVANS: You'll make sure I get the
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1 originals with his notes and everything?

2 MR. TIGERMAN: That's true. And putting this

3 on the record is to make it clear who had the document last
4 and where they are going.

5 THE WITNESS: Chain of custody.

6 MR. TIGERMAN: You've been watching too much
7 O.J.

8 THE WITNESS: No, that's in Longo's report.

9 MR. TIGERMAN: Okay. The record should
10 reflect at this juncture I obviously feel I have many more
11 questions and we will be contacting you to attempt to
12 arrange a time which we can do this by telephone. I have
no
13 objection if counsel for defendant sit next to this witness
14 wherever he is at. I am going to do my part by telephone
to
15 avoid the traveling.

16 THE WITNESS: How would you arrange this, on
a
17 conference call?

18 MR. TIGERMAN: Yes.

19 MR. EVANS: We'll talk and see what we can
get
20 set up. Maybe we can work something out.

21 MR. TIGERMAN: And the purpose of marking the
22 documents now, so when we get to the documents we all are
on
23 the same page.

24 MR. EVANS: Off the record?

25 MR. TIGERMAN: Yeah.

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1 (Whereupon, the deposition was concluded at
2 5:35 p.m.).

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SIGNATURE OF WITNESS